

137.



A N  
A C C O U N T  
O F T H E  
L I F E A N D W R I T I N G S

O F T H E L A T E  
WILLIAM HUNTER, M.D.F.R.S. and S.A.

MEMBER of the ROYAL COLLEGE of PHYSICIANS,  
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A N D  
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One of the FOREIGN ASSOCIATES of the ROYAL ACADEMY  
OF SCIENCES, and of the ROYAL MEDICAL SOCIETY  
at PARIS, &c.

Read, on the 6th of August 1783,

At a General Meeting of the  
SOCIETY of PHYSICIANS of LONDON,  
Of which He was

P R E S I D E N T,  
And published at their Request.

B Y  
SAMUEL FOART SIMMONS, M.D.F.R.S.

Member of the Royal College of Physicians, London;  
Honorary Fellow of the Royal College of Physicians of  
Lorraine; and one of the Foreign Associates  
of the Royal Medical Society at Paris.

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T O

WILLIAM WATSON, M.D. V.P.R.S.

*Trust. Br. Mus. &c.*

P R E S I D E N T ;

WILLIAM GRANT, M.D. &c.

T R E A S U R E R ;

MAXWELL GARTHSHORE, M.D.F.R.S.&c.

S E C R E T A R Y ;

AND THE OTHER MEMBERS OF THE  
SOCIETY OF PHYSICIANS OF LONDON;

The following Tribute of Respect to the Memory of

D R . W I L L I A M H U N T E R ,

T H E I R L A T E P R E S I D E N T ,

I S W I T H G R E A T D E F E R E N C E I N S C R I B E D ,

B Y T H E I R A F F E C T I O N A T E C O L L E A G U E

A N D O B L I G E D H U M B L E S E R V A N T ,

S A M U E L F O A R T S I M M O N S .



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## ADVERTISEMENT.

WHEN I engaged in the following Biographical Essay, at the request of the Society of Physicians, I was aware that without considerable assistance my account of Dr. Hunter would be very imperfect.—The information I wanted has been supplied by the kindness of different friends, to whom I embrace this opportunity of acknowledging my obligations.—For much of the early part of Dr. Hunter's history I am indebted to Dr. Cullen. Mr. Matthew Baillie has favoured me with an account of Dr. Hunter's unpublished writings, and with other materials. My thanks are due likewise

## vi ADVERTISEMENT.

wife to Dr. Pitcairn, Dr. Bromfield, Dr. Denman, Mr. John Hunter, Mr. Henry Watson, and Mr. Charles Combe, for different communications, of which I have availed myself in the course of the work.

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### E R R A T A.

P. 3, & 13, *for fat out, read set out.*

P. 15, *in the note concerning Dr. Sandys, after the word died, add in 1771.*

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WILLIAM HUNTER, M.D.

**W**ILLIAM HUNTER was born on the 23<sup>d</sup> of May, 1718, at Kilbride, in the county of Lanerk. He was the seventh of ten children\* of John and Agnes Hunter, who resided

\* These were John, Elizabeth, Andrew, Janet, James, Agnes, William, Dorothea, Isabella, and John. Of the Sons, John the eldest, and Andrew died young; James, born in 1715, was a writer to the signet at Edinburgh, who, disliking the profession of the law, came to London in 1743, with an intention to study anatomy under his brother William, but was prevented from pursuing this plan by ill health, which induced him to return to Long Calderwood, where he died soon after, aged 28  
A years;



sided on a small estate in that parish, called Long Calderwood, which had long been in the possession of his family. His great grandfather, by his father's side, was a younger son of Hunter of Hunterston, chief of the family of that name.

At the age of fourteen his father sent him to the college of Glasgow. In this seminary he passed five years, and by his prudent behaviour and diligence acquired the esteem of the professors, and the reputation of being a good scholar.

His father had designed him for the church, but the idea of subscribing to articles of faith, was so repugnant to the liberal mode of thinking he had already adopted, that he felt an insuperable aversion to his theological pursuits. In this state of mind he happened to become acquainted with Dr. Cullen, the present cele-

years; John, the youngest, is the present celebrated anatomist.—Of the daughters, Elizabeth, Agnes, and Isabella, died young; Janet married Mr. Buchanan of Glasgow, and died in 1749; Dorothea, who is still living, married the late Rev. James Baillie, D.D. professor of divinity in the university of Glasgow, by whom she has a son Matthew Baillie, of Baliol College, Oxford, B. A. and two daughters.

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brated professor at Edinburgh, who was then just established in practice at Hamilton, under the patronage of the Duke of Hamilton. Dr. Cullen's conversation soon determined him to lay aside all thoughts of the church, and to devote himself to the profession of physic.

His father's consent having been previously obtained, Mr. Hunter, in 1737, went to reside with Dr. Cullen. In the family of this excellent friend and preceptor he passed nearly three years, and these, as he has been often heard to acknowledge, were the happiest years of his life. It was then agreed, that he should go and prosecute his medical studies at Edinburgh and London, and afterwards return to settle at Hamilton, in partnership with Dr. Cullen.

Speaking to me of the manners and disposition of his friend at this period Dr. Cullen observed, that his conversation was remarkably lively and agreeable, and his whole conduct at the same time more strictly and steadily correct than that of any other young person he had ever known. The same cheerfulness and the same regard for prudence accompanied him through life.

He sat out for Edinburgh in November 1740, and continued there till the following spring,



attending the lectures of the medical professors, and amongst others those of the late Dr. Alexander Monro, who many years afterwards in allusion to this circumstance styled himself his “ old master \*.”

Mr. Hunter arrived in London in the summer of 1741, and took up his residence at Mr. afterwards Dr. Smellie’s, who was at that time an apothecary in Pall-mall. He brought with him a letter of recommendation to his countryman Dr. James Douglas, from Mr. Foulis, printer at Glasgow, who had been useful to the doctor in collecting for him different editions of Horace †. Dr. Douglas was then intent on a great anatomical work on the bones, which he did not live to complete, and was looking out for a young man of abilities and industry whom

\* Supplement to the Med. Comment.

† Dr. Douglas, with great industry and expence, in the course of a number of years, made a collection of all the editions of Horace which had been published from the year 1476 to the year 1739. Dr. Harwood, who mentions this circumstance in his View of the various editions of the Greek and Roman classics, observes, that this one author alone, thus multiplied, must have constituted a very considerable library. A very accurate detail of these different editions is prefixed to the first volume of Watson’s Horace.

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he might employ as a dissector. This induced him to pay particular attention to Mr. Hunter, and finding him acute and sensible, he desired him to make him another visit. A second conversation confirmed the doctor in the good opinion he had formed of Mr. Hunter, and without any farther hesitation he invited him into his family to assist in his dissections, and to superintend the education of his son.

Mr. Hunter having communicated this offer to his father and Dr. Cullen, the latter readily and heartily gave his concurrence to it; but his father, who was very old and infirm, and expected his return with impatience, consented with reluctance to a scheme the success of which he thought precarious. By the favour of Dr. Hunter's executors, I have seen the letter he wrote on this occasion to his son. In this letter he says, "Nothing has proved a greater comfort  
 " than the hopes of seeing you here soon; but  
 " your letter has cast a very great damp upon  
 " us all. I think you have been in a very extraordinary manner obliged to Dr. Douglas,  
 " and whatever opinion I may have of his present offer, or however unwilling I may be to  
 " consent to it, still I must thankfully own it,  
 " as a particular instance of his kindness to you.

" I



“ I surely must soon expect to be beyond this  
 “ side of time, considering my age and present  
 “ indisposition, being for some days past con-  
 “ fined to my bed with sickness, and a severe  
 “ fit of the gravel, and would be glad to have  
 “ you near me for the little while I shall be in  
 “ this world; though at the same time I should  
 “ be sorry to hinder you from making your  
 “ way in the world, the best way you can.—I  
 “ wish you to consider well what you do.—  
 “ With Dr. Cullen you may be very comfort-  
 “ ably settled, and make money, and if you  
 “ miss this opportunity now, you cannot be  
 “ sure of it at another time.—Dr. Douglas’s  
 “ kind offer is only for a time. He may die  
 “ before you come home or are settled, and  
 “ leave you without friends at a great enough  
 “ uncertainty. I suppose now you know very well  
 “ the difference between the expence of living  
 “ at home and abroad, and that perhaps cloaths  
 “ and pocket-money may cost you more than  
 “ your whole expence at home would do. You  
 “ know my willingness to assist you, but you  
 “ know too, that already I have gone fully as  
 “ far as my numerous family will allow of.—  
 “ You must now do something for yourself.  
 “ —Consider all these things, and if you can  
 “ persuade

“ persuade me that it is for your good, I will  
 “ not be against it.”

This was the language of a plain sensible man, anxious for the welfare of his son; and although it failed to produce the effect he wished for, it probably served as an excitement to industry.

His father did not long survive the writing of this letter. It is dated at Long Calderwood, July 28, 1741, and he died on the 30th of October following, aged seventy-eight years.

Mr. Hunter having accepted Dr. Douglas's invitation was by his friendly assistance enabled to enter himself as a surgeon's pupil at Saint George's Hospital under Mr. James Wilkie, and as a dissecting pupil under Dr. Frank Nichols, who at that time taught anatomy with considerable reputation. He likewise attended a course of lectures on experimental philosophy by Dr. Desaguliers.

Of these means of improvement he did not fail to make a proper use. He soon became expert in dissection, and Dr. Douglas was at the expence of having several of his preparations engraved. But before many months had elapsed, he had the misfortune to lose this excellent



cellent friend. Dr. Douglas died on the first of April, 1742, in his 67th year, leaving a widow \* and two children.

This event, the probability of which his father had pointed out to him, does not seem to have retarded his progress. Such a loss, and at so critical a period, would probably have destroyed the hopes of any man of less abilities or industry than he possessed. But he seems by this time to have had a consciousness of the superiority of his talents, and he who feels himself equal to great things will not easily be dismayed.

\* Mrs. Douglas survived her husband till May 5, 1752, when she departed this life at the age of 63 years. Her daughter, Jane Martha Douglas, died in 1744, aged 28; her son, James Douglas, who set out in life with the fairest prospect, ruined himself by his indiscretion, and died about the year 1755, aged 30 years. It has been injuriously reported of Dr. Hunter, that he suffered his friend's son to languish in poverty, without administering to his wants. The truth is, that Dr. Hunter, after lending him at different times a larger sum than he could conveniently spare, was obliged to abandon him to his imprudence. Mr. Douglas's notes of hand to the amount of about 100l. are in the possession of Dr. Hunter's executors.

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The death of Dr. Douglas made no change in his situation. He continued to reside with the doctor's family, and to pursue his studies with the same diligence as before.

In 1743 he communicated to the Royal Society an Essay on the Structure and Diseases of articulating Cartilages\*. This ingenious paper, on a subject which till then had not been sufficiently investigated, affords a striking testimony of the rapid progress he had made in his anatomical inquiries.

After some fruitless attempts by macerating and boiling cartilages in different menstrua, he had fallen upon a method not only of bringing their fibrous texture to view, but of tracing the direction and arrangement of those fibres. He found that when an articulating cartilage was well prepared, it felt soft, and yielded to the touch, but restored itself to its former equality of surface when the pressure was taken off. This surface, when viewed through a glass, appeared like a piece of velvet. Thus he compared the texture of a cartilage to the pile of velvet, its fibres rising up from the bone, as the silky threads of that rise from the woven cloth or

\* Phil. Transf. vol. XLII.

basis. These perpendicular fibres he considered as forming the greatest part of the cartilaginous substance, but he was of opinion that there are likewise transverse fibres, which connect them and make the whole a solid body, though these last are not easily seen, because, being very tender, they are destroyed in preparing the cartilages.

As he had it in contemplation to teach Anatomy, his attention was directed principally to this object; and it deserves to be mentioned as an additional mark of his prudence, that he did not precipitately engage in this attempt, but passed several years in acquiring such a degree of knowledge, and such a collection of preparations as might insure him success.

Dr. Nichols, to whom he communicated his scheme, and who declined giving lectures about that time in favour of the late Dr. Lawrence, did not give him much encouragement to prosecute it. But at length an opportunity presented itself for the display of his abilities as a teacher.

A society of navy surgeons had an apartment in Covent Garden, where they engaged the late Mr. Samuel Sharpe to deliver a course of lectures on the operations of surgery. Mr. Sharpe continued to repeat this course, till finding that  
it

it interfered too much with his other engagements, he declined the task in favour of Mr. Hunter, who gave the society so much satisfaction that they requested him to extend his plan to Anatomy, and at first he had the use of their room for his lectures. This happened in the winter of 1746.

He is said to have experienced much solicitude when he began to speak in public, but the applause he met with soon inspired him with courage; and by degrees he became so fond of teaching, that for many years before his death he was never happier than when employed in delivering a lecture.

The profits of his two first courses were considerable\*, but by contributing to the wants of different

\* My friend Mr. Watson, F. R. S. who was one of Mr. Hunter's earliest pupils, has told me that he accompanied him home after his introductory lecture. Mr. Hunter, who had received about seventy guineas from his pupils, and had got the money in a bag under his cloak, observed to Mr. Watson that it was a larger sum than he had ever been master of before.—Dr. Pulteney, in his life of Linnæus, has not thought it superfluous to record the slender beginning from which that great naturalist rose to ease and affluence in life. “*Exivi patria triginti sex nummis aureis dives*” are Linnæus's own



different friends, he found himself at the return of the next season obliged to defer his lectures for a fortnight, merely because he had not money enough to defray the necessary expence of advertisements. This circumstance, which he himself mentioned to me, taught him to be more reserved in this respect, particularly as he found that by thus distressing himself, he had only encouraged the idleness of his companions. As he had always an aversion to borrowing, he now determined to be cautious of lending money, and by adhering to this prudent rule, and strict œconomy, he was afterwards enabled to amass that great fortune of which he made so liberal a use.

In 1747† he was admitted a member of the Corporation of Surgeons, and in the spring of the following year\*, soon after the close of his lec-

words. Anecdotes of this sort deserve to be recorded as an encouragement to young men, who with great merit possess but little advantages of fortune.

† August 6.

\* I had some difficulty in ascertaining the date of this tour to the Continent, till Dr. Pitcairne recollected that Mr. Hunter brought him a copy of the *Codex Medicamentarius*, which was published at Paris just as he was setting out on his return home. The date of this work, which appeared in 1748, fixes the time of the excursion in question to that year.

tures, he sat out in company with his pupil, Mr. James Douglas, on a tour through Holland to Paris.

Of this excursion to the Continent I have no anecdotes to relate, except that at Leyden he paid his respects to the celebrated Albinus, who amongst other things shewed him a preparation of the membrana pupillaris, and whose admirable injections, as he afterwards told Dr. Cullen, inspired him with a strong emulation to excel in that elegant and curious part of anatomy.

His lectures suffered no interruption by this journey, as he returned to England soon enough to prepare for his winter course, which began about the usual time.

At first he practised both surgery and midwifery, but to the former of these he had always an aversion. His patron, Dr. James Douglas, had acquired considerable reputation in midwifery, and this probably induced Mr. Hunter to direct his views chiefly to the same line of practice. His being elected one of the surgeon-men-midwives first † to the Middlesex, and soon afterwards ‖ to the British Lying-in Hospital, assisted in bringing him forward in this branch

† 1748.

‖ 1749.



of his profession, in which he was recommended by several of the most eminent surgeons of that time, who respected his anatomical talents and wished to encourage him.

But these were not the only circumstances that contributed to his success. He owed much to his abilities, and much to his person and manner, which eminently qualified him for the practice of midwifery, and soon gave him a decided superiority over his countryman Dr. Smellie, who, to the weight of great experience, united the reputation he had justly acquired by his lectures and writings : but his person is said to have been coarse, and his manner awkward and unpleasing, so that he never rose into any great estimation amongst persons of rank.

The most lucrative part of the practice of midwifery was at that time in the hands of Sir Richard Manningham and Dr. Sandys\*. The former

\* Francis Sandys, M. D. for some time professor of anatomy at Cambridge, was a most assiduous and able anatomist, and had a large collection of anatomical preparations. He had all the parts of the eye finely prepared and preserved, and elegantly expressed in drawings. He was also very curious in his injections, and discovered the art of making them pellucid with oil of turpentine.

former of these died, and the latter retired into the country a few years after Mr. Hunter began to be known in midwifery.—I have been the more particular in tracing these circumstances, as the fortune of his life seems to have turned chiefly on his success at this period.

Although by these incidents he was established in the practice of midwifery, it is well known that in proportion as his reputation increased, his opinion was eagerly sought after in all cases where any light concerning the seat or nature of the disease could be expected from an intimate knowledge of anatomy.

In 1750 he seems to have entirely relinquished his views in surgery, as in that year he obtained the degree of Doctor of Physic † from the University of Glasgow, and began to practise as a physician. About this time he quitted the family of Mrs. Douglas, and went to reside in Jermyn-street.

turpentine. Dr. Hunter, in his Medical Commentaries, mentions him as the discoverer of the *membrana pupillaris*. He died in a retired situation in Bedfordshire at a very advanced age. His collection was first in the possession of Mr. Bromfeild, and afterwards sold for 200 l. to Dr. Hunter.

† The diploma is dated Oct. 24, 1750.

In the summer of 1751 he re-visited his native country, for which he always retained a cordial affection. His mother || was still living at Long Calderwood, which was now become his property by the death of his brother James. Dr. Cullen, for whom he always entertained a sincere regard, was then established at Glasgow §, and

|| Mrs. Hunter died Nov. 3, 1751, aged 66 years.

§ In an erroneous account of Dr. Hunter, which has appeared in different prints, we are told, that about the time of his coming to London, Dr. Cullen, through the interest of a nobleman of high rank, was appointed to a Professorship in the University of Glasgow. But this is not true. Dr. Cullen remained at Hamilton till the year 1743, that is, two years after his friend had quitted it. The Duke of Hamilton, under whose patronage he had settled there, died in that year, leaving a successor, under age, and of course not likely soon to establish a family at Hamilton. This induced Dr. Cullen to remove to Glasgow. In the year 1744, at the desire of the university, and with the consent of the then Professor of Physic, he began to read on the Institutes and Practice of Physic, and a few years afterwards the professor resigned his chair to him. But in this matter no nobleman had any share. He owed his success solely to his own abilities and exertions. It is true, however, that while he was a professor at Glasgow, and employed in teaching chemistry, he had the honour of becoming known



and had acquired considerable reputation both as a practitioner and teacher of physic ; so that the two friends had the pleasure of being able to congratulate each other on their mutual prosperity.

During this visit he shewed his attachment to his little paternal inheritance, by giving many instructions for repairing and improving it, and for purchasing any adjoining lands that might be offered for sale. As he and Dr. Cullen were riding one day in a low part of the country, the latter, pointing out to him Long Calderwood at a considerable distance, remarked how conspicuous it appeared. “ Well”—said he, with some degree of energy—“ if I live I shall make it “ still more conspicuous.”

After this journey to Scotland, to which he devoted only a few weeks, he was never absent from London, unless his professional engagements, as sometimes happened, required his attendance at a distance from the capital.

In 1755, on the resignation of Dr. Layard, one of the physicians of the British Lying-in

known to the late Archibald Duke of Argyle, and by his Grace's patronage he procured, in the year 1755, a Professorship in the University of Edinburgh. The mistake seems to have originated in this circumstance.

Hospital, we find the governors of that institution voting their “ thanks to Dr. Hunter for the “ services he had done the hospital, and for his “ continuing in it as one of the physicians\* ;” so that he seems to have been established in this office without the usual form of an election. The year following† he was admitted a licentiate of the Royal College of Physicians, and soon afterwards was elected a member of the Medical Society. His history of an Aneurism of the Aorta appears in the first volume of their observations and inquiries published in 1757. Of this and his other essays in the different volumes of that collection, I shall here give some account, that it may be seen how much he contributed to its utility.

In the first volume, to the history of the aneurism just now mentioned, he has added some remarks on aneurisms in general. With a view to settle the disputes concerning the nature of diseases of this sort, he proposes a division of them into three kinds rather than into two, as had been commonly done by preceding writers.

\* Extracted from the minutes of the Weekly Committee of the Hospital, dated June 20, 1755.

† Sept. 30, 1756.

Thus,



Thus, he observes, that aneurisms are either *true*, *false*, or *mixed*. The first of these species he ascribes to a dilatation, and the second to a rupture of the arterial coats; the third, he thinks, is brought on by both these causes united.—He proves from his own observation in five cases, that such a disease as the *true* aneurism may exist. This proposition, though generally allowed, had been denied by some authors, who had imagined that in every aneurism the arterial coats are not simply dilated, but ruptured.

In the course of these remarks Dr. Hunter first mentioned a particular species of aneurism, of which he afterwards\* treated more at large. This disease, which till his account of it appeared had been totally overlooked, occurs where an artery has been opened through a vein, and a communication is afterwards kept up between the two vessels. At the suggestion of Dr. Cleg-horn|| it has since been distinguished by the name of *aneurismal varix*. As it soon comes to nearly a permanent state, it is of importance to be able to distinguish it from the common spurious aneurism, as the latter requires surgical

\* Medical Observations and Inquiries, Vols. II. and IV.

|| Ibid. Vol. III.

assistance, while the aneurismal varix, if left to itself, is productive of no ill consequence. A knowledge of this disease must therefore be considered as a useful acquisition to surgery.

In the second volume we find several papers by Dr. Hunter. The first relates to an instance of emphysema, in which relief was obtained by scarifications. This case served to confirm the utility of a practice, which had been recommended by former writers, particularly by Ambrose Paré, who relates a memorable instance of its good effects.

To his description of this case Dr. Hunter adds some remarks on the cellular membrane and its diseases.—Haller has considered this membrane as the inorganic basis of all our organized and vascular solids; but Dr. Hunter, in this paper, observes, that as the inorganic stamina of the human body are too minute to be seen, it is impossible to determine their real nature with certainty; but he affirms, that all its visible parts are of a vascular texture.

He remarks, that the cellular membrane is of two kinds, reticular and adipose; and he differs from former anatomists, who had supposed, that the oil of the adipose membrane is lodged in the same cavities as the waters of the anasarca.

Wherever

Wherever there is fat in the human body, he thinks there is a particular organization or glandular apparatus superadded to the reticular membrane, consisting of vesicles for lodging the animal oil, as well as vessels fitted for its secretion; so that he compares the marrow in the bones to the glandular or follicular parts of the adipose membrane, and the net-work of bony fibres and laminæ, which supports the marrow, to the reticular membrane that is mixed with and supports the adeps.

In treating of the diseases of the cellular membrane, he mentions the anasarca. In cases of this sort the methods of discharging the water had been different. Some writers had recommended incisions of considerable length and depth; while others advised very small punctures. Dr. Hunter gives the preference to the latter, as being less painful, and less liable to inflammation and mortification. It seems that he had tried both these methods, one on each leg of the same patient, and by that means had clearly seen the advantage of the one method over the other.

In this paper we meet with a good description of the dropsy of the ovarium, a disease in which it had been proposed by some modern surgeons of great reputation to attempt a radical cure by incision



tion and suppuration, or by the excision of the cyst. Dr. Hunter, who was always cautious in adopting any new operation where the chance of success seemed inadequate to the certainty of danger, clearly proves that excision can hardly be attempted; and that incision and suppuration can be recommended only under very particular circumstances.

His other papers in this second volume are, 1. An account of a diseased Tibia, which shews that a callus will supply the place of a bone, and preserve the length and firmness of a limb, when the greatest part of the original bone is become useless, or thrown out by exfoliation; and 2. Remarks on the symphysis of the Ossa Pubis, which he describes as a composition of two cartilages and a ligament, somewhat like the connecting substance between the bodies of the vertebræ. Several cases that had occurred to him sufficiently proved, that in lying-in women there may be a cavity in the symphysis of the ossa pubis, and he considered this observation as one step towards explaining why matter is sometimes collected there.

In the fourth volume he relates a case, which served to confirm his own and M. de Haller's theory concerning the insensibility of tendons; and  
in

in that and the fifth volumes he communicated his observations on the Retroverted Uterus. This disease, although it had been mentioned by M. Gregoire in his lectures at Paris, and my friend, M. Peyrilhe, the learned author of a History of Surgery\*, thinks he has discovered some traces of it in the writings of the ancients, was certainly not understood till Dr. Hunter described it, first in his lectures in 1754, and afterwards in one of the volumes of the work in question, since which it has been generally known. It is worthy of observation, however, that within two years before the publication of that volume two pregnant women had lost their lives by this accident, in London. In both of these instances experienced practitioners saw with regret in the dead body what they might have easily cured in the living, if they had made a very obvious discovery in proper time.

The sixth volume, which is now in the press, will contain three papers written by Dr. Hunter. In one of these he describes three cases, by way of supplement to an instance communicated by Dr. Pulteney, of an extraordinary conformation of

\* Histoire de la Chirurgie depuis son origine jusqu'à nos jours. Vol. II. 4to. Paris, 1780.



the heart. In the second paper he relates the history of an obstinate disease of the stomach cured by the use of milk in small quantities; and in the third he treats of the uncertainty of the signs of murder in the case of bastard children.

In 1762 we find him warmly engaged in controversy, supporting his claim to different anatomical discoveries, in a work entitled *Medical Commentaries*, the style of which is correct and spirited. As an excuse for the tardiness with which he brought forth this work, he observes in his introduction, that it required a good deal of time, and he had little to spare; that the subject was unpleasant, and therefore he was very seldom in the humour to take it up.

In this publication he confined himself chiefly to a dispute with the present learned professor of anatomy at Edinburgh, concerning injections of the testicle, the ducts of the lachrymal gland, the origin and use of the lymphatic vessels, and absorption by veins. He likewise defended himself against a reproach thrown upon him by Professor Monro, senior, by giving a concise account of a controversy he was involved in with Mr. Pott, concerning the discovery of the *Hernia Congenita*. It was not long before Mr. Pott  
took



took occasion to give the public his account of the dispute; and, in reply, Dr. Hunter added a supplement to his Commentaries.

It has been observed of anatomists that they are all liable to the error of being severe on each other in their disputes. Dr. Hunter, whose own writings\* afford us this remark, very pleasantly adds, that for any thing we know, the passive submission of dead bodies, their common objects, may render them less able to bear contradiction. “It is remarkable,”—says he,—“that there is scarce a considerable character in anatomy that is not connected with some warm controversy. Anatomists have ever been engaged in contention. And indeed, if a man has not such a degree of enthusiasm, and love of the art, as will make him impatient of unreasonable opposition, and of encroachments upon his discoveries and his reputation, he will hardly become considerable in anatomy, or in any other branch of natural knowledge.

“These reflections afford some comfort to me, who unfortunately have been already

\* Supplement to the first part of Medical Commentaries.

“ engaged in two public disputes. I have imi-  
 “ tated some of the greatest characters, in what  
 “ is commonly reckoned their worst part; but  
 “ I have also endeavoured to be useful; to im-  
 “ prove and diffuse the knowledge of anatomy:  
 “ and surely it will be allowed here, that if I  
 “ have not been serviceable to the public in this  
 “ way, it has not been for want of diligence or  
 “ love of the service \*.”

With regard to the injection of the testicle it  
 may be remarked, that Dr. Monro filled the  
*tubuli testis* with mercury in 1753; and that  
 Dr. Hunter proves his having shewed a prepa-  
 ration † of this kind at his lectures in 1752;  
 but that Haller has since claimed the merit of  
 having made and published this discovery so early  
 as the year 1745 ‖.

\* Supplement to the Medical Commentaries.

† Dr. Hunter acknowledges that it was Mr. Henry  
 Watson who first shewed him the ducts coming out  
 from the *testis* to form the *epididymis*, in a preparation  
 where he had traced them by dissection with great ac-  
 curacy. See Med. Com. p. 2.

‖ “ Hunterus se anno 1752 testem cum suis vasis  
 “ argento vivo replevisse monet; nos anno 1745 de-  
 “ scripseramus, et in programme Winklerianæ dispu-  
 “ tationi addito, et in Philos. Transf.” Halleri *Bib-  
 lioth. Anatom.*

The ducts of the lachrymal gland after the discovery of them in the ox, by Stenon, had been often observed both in that animal and in the sheep. Santorini and Winslow had even seen and described them in the human subject; but some of the most distinguished modern anatomists had sought for them in vain, so that their existence in man was still a subject of dispute when Dr. Hunter began to teach anatomy.

It appears that at his lectures in 1747 he introduced bristles into the ducts of this gland in the human subject. Dr. Monro did the same thing in 1753. The reputation that could be derived from this circumstance, was hardly adequate to the warmth with which it was claimed by either of the disputants. It could not be the reputation of a first discovery, it was merely the credit of having demonstrated that which had escaped the penetration of Morgagni and Haller.

In the dispute concerning the origin and use of the lymphatic vessels, the eagerness of the contending parties was perhaps more excusable. The discovery was extremely interesting to the practice of physic and surgery, and the emulation of two anatomists who disputed with each other the honour of the invention, would na-



turally be in proportion to the importance of the subject.

Dr. Hunter, in his account of the controversy, observes, that when he began to give lectures the most commonly received opinion concerning the lymphatic veins was, that they were a continuation of lymphatic arteries; but that he, on the contrary, was led to consider them as a system of absorbing vessels, which begin from all the internal and external surfaces of the body.

It was at that time generally allowed that all the surfaces of the body are bibulous, or provided with absorbent vessels, by which mercury applied to the skin, collections of water in the breast, belly, or in the cellular membrane, &c. are occasionally taken up and conveyed into the circulation. That the lymphatic veins perform this office, he thought probable, from having observed that he had not been able to inject them like other veins, by filling the arterial system; and from having sometimes remarked in injecting, that they were immediately filled with wax, when the arteries burst, and the wax was effused into the cellular membrane. But what appeared to him to be the most striking argument in support of his opinion

nion

nion was the analogy between the lymphatics and lacteals. These two systems were to all appearance, the same in their coats, in their valves, in their manner of ramifying, in their passage through the lymphatic or conglobate glands, and in their termination in the thoracic duct. As they were perfectly similar, in every other respect, he supposed them to be so in their origin and use. The lacteals were known to begin from the surface of the intestines, and to be the absorbents of those parts. Hence he concluded, that there was no difference between them but in their names, and that the same vessels were called *lacteals* in the intestines, and lymphatics in the other parts of the body. This doctrine explained the use of valves in the lymphatics. In other veins, the fluid was supposed to move onward by an impetus received in the arterial system; but the case could not be the same in vessels that imbibe a fluid from a surface.—These ideas concerning the lymphatics were farther confirmed by the absorption and progress of the venereal poison.

Such were the opinions maintained by Dr. Hunter in his lectures in the year 1746.—Dr.  
Monro

Monro in his Inaugural Dissertation ||, printed in 1755, introduced several arguments to prove that the valvular lymphatic vessels, through the whole body, are a system of absorbent veins; and that they do not proceed from the branches of arteries as was the common opinion: and two years afterwards in a work on the lymphatics †, published at Berlin, he treats fully of their origin, structure, and use, and quotes many of the latest writers to prove that his opinions on this subject were new.

Neither Dr. Hunter nor Dr. Monro seem to have been aware that the main points for which they contended are to be found in an abridgement of anatomy §, published at Paris so early.

|| *Dissertatio Inauguralis de Testibus et Semine in variis animalibus.*

† *De Venis Lymphaticis valvulosis et de earum imprimis origine.*

§ *L'Anatomie du Corps de l'homme en abrégé; par M. Noguez, Medecin du Roy, et Demonstrateur d'histoire naturelle au Jardin Royal, 8vo Paris. 2d edition, 1726.*—The first edition of this work, published in 1723, was little more than a translation of Keil's anatomy, but this second edition contains many observations peculiar to the author, and, among others, those which I have quoted relative to the lymphatics.



as the year 1726, by M. Noguez, a French anatomist. This work, which is at present but little known, contains several passages that have been overlooked \* by succeeding writers, but which clearly prove that the author was not unacquainted with the absorbing office of the lymphatic veins, and their analogy to the lacteals.

In the eighth chapter of the third part of his work, M. Noguez, after having given a good account of the lacteals and their valves, and likewise of the thoracic duct, describes the lymphatics in the following terms: “ La structure  
 “ des vaisseaux lymphatiques et la maniere de  
 “ les demontrer sont les memes que dans les  
 “ veines lactées. . . . Les vaisseaux lymphatiques  
 “ sont des vaisseaux tres petits ; minces, trans-  
 “ parens, qui renferment ordinairement une li-  
 “ queur aqueuse qu’on appelle lympe . . . . on  
 “ les trouve d’ordinaire à la surface des par-  
 “ ties, sur tout du foye. Leur structure et  
 “ leur substance ne different point des veines

\* I am aware that M. Noguez is one of the authors quoted by Mr. Hewson in his description of the lymphatic system ; but Mr. Hewson makes no mention of those parts of M. Noguez’s descriptions which relate to the analogy of the lymphatic veins to the lacteals, their difference from what were considered as lacteal arteries, or the means of demonstrating them.

“ lactées. Ils ont beaucoup de valvules qui  
 “ sont doubles et semi-lunaires, et qui sont d’un  
 “ grand usage pour faciliter le mouvement pro-  
 “ gressif de la lymphe. Ruyfch les a parfaite-  
 “ ment bien decrites et démontrées. Il en naît  
 “ de presque toutes les parties du corps, ou  
 “ peut-etre de toutes les parties: la chose est  
 “ encore indecise. . . . Pour les demontrer il faut  
 “ lier la veine thoracique, la veine cave, ou  
 “ quelqu’ autre gros tronc dans un animal vi-  
 “ vant, ou tué depuis peu: on souffle ensuite  
 “ dans les veines, ou dans les arteres, ou dans  
 “ les tuyaux excretoires des visceres.... Il y a des  
 “ glandes qu’on appelle *conglobées*, ou les vais-  
 “ seaux lymphatiques aboutissent, et qui servent  
 “ d’entrepots \*.” He allows the existence of  
 lym-

\* “ The structure of the lymphatic vessels, and the  
 “ manner of demonstrating them are the same as in the  
 “ lacteal veins.... The lymphatic vessels are very minute  
 “ vessels; thin, transparent, and usually containing a  
 “ watery liquor called lymph. . . . They are commonly  
 “ found on the surface of parts, particularly of the  
 “ liver. In their structure and composition they are  
 “ the same as the lacteal veins. They have a great  
 “ number of valves which are double and semi-lunar,  
 “ and which are of great utility to facilitate the pro-  
 “ gressive motion of the lymph. Ruyfch has described  
 “ and demonstrated them perfectly well. They arise from  
 “ almost all parts of the body, or perhaps from every  
 “ part; but this is as yet undetermined. . . . To demon-  
 strate



lymphatic arteries which exhale a subtile vapour or lymph, but he is careful to distinguish these from the *lymphatic veins*, which he considers as *absorbents*. “ Les premiers—says he—naissent  
 “ des extremittez arterieles, comme dans l’oeil,  
 “ à la peau : on les nomment arteres lymphatiques, qui peut-être ne sont autre chose que  
 “ les conduits excretoires d’une lympe tres  
 “ subtile, ou de la matiere de la transpiration.  
 “ Les seconds vaisseaux lymphatiques sont veineux ; ils reportent la lympe dans les vaisseaux sanguins ou dans les veines ; il y’en a  
 “ dans toutes les parties du corps ; ils repompent la matiere lymphatique qui s’evacue par  
 “ les premiers, on peut les nommer conduits  
 “ absorbans\*.”—There is certainly a great dif-

“ strate them, we must first tie the thoracic duct, the  
 “ vena cava, or some other large trunk in a living animal, or one recently killed ; and then blow into the  
 “ veins or the arteries, or the excretory ducts of the  
 “ viscera.—There are glands called *conglobate*, where  
 “ the lymphatic vessels enter, and which serve as  
 “ reservoirs.”

\* “ The first arise from the extremities of arteries as  
 “ in the eye, and in the skin. These may be called  
 “ lymphatic arteries, and are perhaps no other than the



difference between this state of the discovery, and the progress that has since been made in it by injecting the lymphatic veins with mercury, tracing their origin and course in different parts of the body, explaining their structure and use, and applying the doctrine of absorption to pathology. For these improvements we are indebted to Dr. Hunter, Dr. Monro, Mr. Hewson, and other modern anatomists ; but the passages I have just now quoted are sufficient to shew, that in a history of the absorbent system our obligations to M. Noguez ought not to be forgotten.

Speaking of dislocations\* Dr. Hunter delivers what he supposed at the time to be a new doctrine, viz. that when a luxation is produced by violence in a healthy state, the capsular ligament is lacerated. But it has been since ob-

“ excretory ducts of a very subtil lymph, or of the  
 “ matter of perspiration. The second lymphatic vessels  
 “ are venous, and carry back the lymph into the blood  
 “ vessels or veins. They are to be met with in all parts  
 “ of the body. *They suck up the lymphatic fluid which*  
 “ *is evacuated by the former, and may be called absorbing*  
 “ *vessels.*”

\* Med. Comm. ch. 7.

served †, that a similar opinion was adopted long ago by Petit ‖.

In the course of his work Dr. Hunter takes occasion to treat \* of the insensibility of the dura mater, periosteum, tendons, and ligaments. On this subject he professes to have delivered nearly the same doctrine in his lectures in 1746, as was afterwards published by Haller in 1752. The just claim, however, of Haller to the thanks of the world for this discovery, as he made it fairly, and was the first who communicated it to the public, has never been disputed. It deserves to be remarked, however, that Dr. Hunter differs in some respects from Haller, who has gone too far, he thinks, in concluding that these parts have absolutely *no sense* of feeling; and who seems to have been led into an error in surgery, by supposing that wounds and punctures of tendons and ligaments, and penetrating wounds in the joints, are attended with as little danger as similar wounds in fleshy parts. Dr. Hunter very prudently cautions his readers against cutting into the cavity of a joint, unless there be very urgent reason for so dangerous a practice.

† Kirkland's Obs. on Fractures, &c. p. 48.

‖ Traité des Maladies des Os. tom. I. p. 46.

\* Med. Comm. ch. 3.

What he says of absorption by veins is founded chiefly on experiments made and related by his brother, Mr. John Hunter, and which, in his opinion, prove that in the human body the red veins do not absorb.

With regard to the *hernia congenita* Dr. Hunter acknowledges that he first learned from Mr. Sharpe, in 1748, that cases of rupture sometimes occur, where the intestine is found in the same sac, and in contact with the *testis*. The truth of this he afterwards confirmed by his own observation, but till he read the account of the *hernia congenita* in Haller's *opuscula pathologica*\*, he had constantly accounted for this phenomenon by supposing that the hernial sac had been lacerated. He now engaged his brother to prosecute inquiries on this subject, and to this circumstance we are indebted for the "Observations† on the state of the *testis* in the  
" foetus,

\* This work was published in 1754, but the account of the *hernia congenita* had appeared in a separate publication in 1749, and Haller had made the discovery so early as 1747.

† " Nos quidem testes in abdomine foetus habitare,  
" serius in scrotum descendere vidimus, et aliquando  
" peritonæum foramine patuisse, per quod testis exiret.  
" Accu-



“ foetus, and on the hernia congenita, by Mr. John Hunter,” which are published in the Medical Commentaries.

No man was ever more tenacious than Dr. Hunter of what he conceived to be his anatomical rights. This was particularly evinced in the year 1780, when his brother communicated to the Royal Society a discovery he had made twenty-five years before relative to the structure of the placenta, the communication between it and the uterus, and the vascularity of the spongy chorion.

At the next meeting of the Society, a letter was read in which Dr. Hunter put in his claim to the discovery in question. This letter was followed by a reply from Mr. John Hunter, and here† the dispute ended.

In 1762, when our present amiable queen became pregnant, Dr. Hunter was consulted; and

“ Accuratius hæc Johannes Hunter, Gulielmi frater,  
 “ exposuit, addidit, ut debilis cellulosa tela cedat,  
 “ testem transmittat, peritonæum vero supra transitum  
 “ confirmet. Hæc bonis iconibus exprimit.” Halleri  
*Biblioth. Anatom.* tom. II. p. 363.

† These papers, though not published by the Society, are preserved in their archives.

two years afterwards || he had the honour to be appointed Physician Extraordinary to her Majesty. In courts, where interest too often prevails over merit, appointments of this sort are not always conferred on persons of the greatest abilities. But it is certain that Dr. Hunter owed his nomination to this important office solely to his own well-earned reputation, and his assiduity and uniform success in the discharge of it shewed how well he deserved it.

About this time his avocations were so numerous that he became desirous of lessening his fatigue; and having noticed the ingenuity and assiduous application of the late Mr. William Hewson, F. R. S. †, who was then one of his pupils,

|| 1764.

†. Of the life of this ingenious anatomist no account had been printed, till my learned friend Dr. Hahn, professor of physic in the university of Leyden, prefixed some anecdotes of him to a Latin translation of his works lately published in that city, but which I have not yet seen. These anecdotes are contained in the following letter with which Mr. Hewson's widow favoured me, in reply to one I had addressed to her at the suggestion of our common friend Mr. Watson, F.R.S. This letter I transmitted to Dr. Hahn, who tells me he has given it entire in a Latin translation; and it affords so

affec-

pupils, he engaged him first as an assistant and afterwards as a partner in his lectures. This  
con-

affectionate and just a tribute to the memory of Mr. Hewson, that I am persuaded my readers will be pleased to see it preserved here in its original form.

“ S I R,

“ I should think myself bound to grant any request  
“ introduced with Mr. Watson’s name ; but that which  
“ you make in the letter I received yesterday needed  
“ no such introduction. A tribute paid to the memory  
“ of Mr. Hewson is highly gratifying to me, and I  
“ can have no employment that will give me more satisfaction than that of assisting in any degree to the  
“ spreading of his fame.

“ You say, you are not unacquainted with the general history of Mr. Hewson’s life, and you speak  
“ of him in terms which shew you are not unacquainted with his character. Had you been among the  
“ number of his friends, you would bear testimony to  
“ his private virtues, which rendered him no less dear  
“ to his family and associates, than his talents made  
“ him respectable in the world.

“ Mr. Hewson was born at Hexham in Northumberland, on the 14th of November, O. S. 1739. He  
“ received the rudiments of his education at a grammar school in that town, under the Rev. Mr. Brown.  
“ His father was a surgeon and apothecary in the place,  
“ and much respected in that neighbourhood. With  
“ him



connexion continued till the year 1770, when  
 some disputes happened, which terminated in a  
 sepa-

“ him Mr. Hewson acquired his first medical know-  
 “ ledge. Being ambitious to increase that knowledge,  
 “ he placed himself first under an eminent surgeon in  
 “ Newcastle (Mr. Lambert) and afterwards resided for  
 “ some time at London, Edinburgh, and Paris. His  
 “ subsequent acquirements are sufficient to prove, that  
 “ he visited those places with a true love of science and  
 “ desire of attaining eminence in his profession.

“ I became acquainted with him in the year 1768.  
 “ He was at that time in partnership with Dr. Hunter.  
 “ Some similarity in our dispositions created a mutual  
 “ esteem, and the equality of our situations made our  
 “ union desirable in point of prudence. I had five  
 “ months the start of him in age, no pretensions to  
 “ beauty, nor any splendid fortune; yet I believe he  
 “ was satisfied with the choice he made. We were  
 “ married July 10th 1770. I brought him two sons.  
 “ The elder was just three years old when Mr. Hewson  
 “ died, which was on the first of May 1774, and I was  
 “ delivered of a daughter on the ninth of August fol-  
 “ lowing. His last moments of recollection were em-  
 “ bittered by the idea of leaving me with three chil-  
 “ dren but scantily provided for. The trial of my  
 “ fortitude was different; the loss of affluence I did  
 “ not feel for myself, and I thought I could bring up  
 “ my children not to want it. However, by the death  
 “ of an aunt, who left me her fortune, I became re-  
 “ inflated

separation. Mr. Hewson was succeeded in the  
partnership

“ inflated in easy circumstances, and am enabled to  
“ give a liberal education to my children, who I hope  
“ will prove worthy of the stock from which they grew,  
“ and do honour to the name of Hewson.

“ Mr. Hewson’s mother is still living at Hexham,  
“ and has one daughter, the youngest and only remain-  
“ ing child of eleven.

“ His father died in 1767 ; and having had so large  
“ a family, it will be readily supposed he could not  
“ give much to his son, so that Mr. Hewson’s advance-  
“ ment in life was owing to his own industry.

“ A better son and husband, or a fonder father than  
“ Mr. Hewson, never existed. He was honoured with  
“ the friendship of many respectable persons now liv-  
“ ing, and the late Sir John Pringle shewed him sin-  
“ gular marks of regard.

“ Mr. Hewson’s manners were gentle and engaging ;  
“ his ambition was free from ostentation, his prudence  
“ was without meanness, and he was more covetous of  
“ fame than of fortune.

“ You will, I trust, readily forgive me, if I have  
“ been more prolix than you desired. It would be no  
“ easy matter for me to relate bare facts without some  
“ comment upon such a subject.

“ I am, S I R,

*Kensington,* “ Your most obedient humble servant,  
*Aug. 30, 1782.* “ MARY HEWSON.”

To this letter I take the liberty to add, that the  
writer of it, whose sentiments do her so much honour,

partnership by Mr. Cruikshank, whose anatomical abilities are deservedly respected.

In 1767\* Dr. Hunter was elected a fellow of the Royal Society, and the year following communicated to that learned body observations on the bones †, commonly supposed to be elephants bones, which have been found near the river Ohio in America.

Naturalists had entertained very different opinions concerning fossil ivory, and the large teeth and bones dug up in different parts of the world. When they were clearly ascertained to be parts of animals, (for at first this was doubted) a dispute arose to what animal they belonged. The more general opinion was, that they were the bones of the elephant; but this was liable to great objections. The bones were observed to be larger than those of the elephant, and it was thought strange that elephants should have been

is the lady to whom Dr. Franklin has addressed several of his letters on Philosophical subjects, and likewise his scheme for a new Alphabet and reformed mode of Spelling, published in the collection of his Political, Miscellaneous and Philosophical pieces.

\* April 30.

† Philos. Transactions, vol. 58.

formerly



formerly so numerous in western countries where they are no longer natives, and in cold countries, Siberia particularly, where they cannot now live.

Of late years the same sort of tusks and teeth, with some other larger bones, have been found in considerable number near the banks of the Ohio in North America. The French academicians became possessed of some specimens of them, and having compared them with the bones of real elephants, and with those which had been brought to France from Siberia, determined with an appearance of truth on their side that they were elephants bones.

This part of natural knowledge appeared to Dr. Hunter to be very curious and interesting, inasmuch as it seemed to concur with many other phænomena, in proving, that in former times some astonishing change must have happened to this terraqueous globe; that the highest mountains, in most countries, now known, must have lain for many ages in the bottom of the sea; and that this earth must have been so changed with respect to climates, that countries, which are now intensely cold, must have been formerly

inhabited by animals that are now confined to the warm climates.

After examining a great number of these teeth and bones, and carefully reading what had been published on this subject by M. M. de Buffon and d'Aubenton\*, Dr. Hunter was convinced that the supposed American elephant was an animal of another species which naturalists were unacquainted with. He imagined further that this *animal incognitum* would prove to be the supposed elephant of Siberia and other parts of Europe, and that the real elephant would be found to have been in all ages a native of Asia and Africa only. In the course of this inquiry having procured one of these fossil tusks to be cut through and polished, he discovered that true or genuine ivory is the production of two different animals, and not of the elephant alone.

This was not the only subject of natural history on which Dr. Hunter employed his pen; for in a subsequent volume† of the Philosophical Transactions, we find him offering his remarks on some bones found in the rock of Gibraltar,

\* Histoire Natur. tom. xi. & Mem. de l'Acad. des Sciences, 1762.

† Vol. 60.

and which he proves to have belonged to some quadruped. In the same work\* likewise he published an account of the Nyl-ghau, an Indian animal, not described before, and which, from its strength and swiftness, promised to be a useful acquisition to this country.

In 1768 || Dr. Hunter became a Fellow of the Society of Antiquaries, and the same year at the institution of a Royal Academy of Arts, he was appointed by his majesty to the office of Professor of Anatomy. This appointment opened a new field for his abilities, and he engaged in it as he did in every other pursuit of his life, with unabating zeal. He now adapted his anatomical knowledge to the objects of painting and sculpture, and the novelty and justness of his observations proved at once the readiness and extent of his genius.

In January 1781, he was unanimously elected to succeed the late Dr. John Fothergill as president of this society. He was one of those to whom we are indebted for its establishment, and our grateful acknowledgments are due to him for his zealous endeavours to promote the liberal views

\* Phil. Transf. vol. 61.

|| Jan. 14.



of this institution, by rendering it a source of mutual improvement, and thus making it ultimately useful to the public.

As his name and talents were known and respected in every part of Europe, so the honours conferred on him were not limited to his own country. In 1780 the Royal Medical Society at Paris elected him one of their foreign associates; and in 1782 he received a similar mark of distinction from the Royal Academy of Sciences in that city.

We come now to the most splendid of Dr. Hunter's medical publications, the *Anatomy of the Human Gravid Uterus*. The appearance of this work, which had been begun so early as the year 1751, (at which time ten of the thirty-four plates it contains were completed) was retarded till the year 1775, only by the author's desire of sending it into the world with fewer imperfections. Something concerning the progress of this work; and of the zeal with which it was prosecuted, may be collected from different parts of his letter to professor Monro, senior, in the Supplement to his *Medical Commentaries*,  
 “ On the 11th of February—says he—I was so  
 “ fortunate as to meet with a Gravid Uterus,  
 “ to which, from that time, all the hours have  
 “ been

“ been dedicated which have been at my own  
 “ disposal. I have been busy in injecting, dis-  
 “ secting, preserving, and shewing it, and in  
 “ planning and superintending drawings and  
 “ plaister casts of it. I have already made five  
 “ very capital drawings from this subject. They  
 “ and some more, shall be engraved by the best  
 “ masters, as soon as possible, and then the  
 “ whole shall be published. My first and ori-  
 “ ginal intention, you know, was to have pub-  
 “ lished ten plates only; but thinking the work  
 “ imperfect, I waited patiently for more oppor-  
 “ tunities of adding supplemental figures. Six-  
 “ teen plates were finished on this plan several  
 “ years ago; but still I was dissatisfied with the  
 “ work, as being incomplete; and in spite of  
 “ the importunity of many friends, I kept it  
 “ from the public.”

Opportunities of dissecting the Human Gravid  
 Uterus occur but seldom. It was probably  
 owing to this circumstance that this part of ana-  
 tomy had been less successfully cultivated than  
 some others. Few, or none, of the anatomists,  
 had met with a sufficient number of subjects,  
 either for investigating, or demonstrating the  
 principal circumstances of Utero-gestation in the  
 human species.

In

In the course of near thirty years, by great diligence, and the assistance of many friends, Dr. Hunter procured in this metropolis so many opportunities of studying the Gravid Uterus, as to be enabled to exhibit, by figures, all the principal changes that occur in the nine months of pregnancy.

This great work is dedicated to the King. In his preface to it we find the author very candidly acknowledging that in most of the dissections he had been assisted by his brother, Mr. John Hunter, “ whose accuracy—he adds—in anatomical researches is so well known, that to omit this opportunity of thanking him for that assistance would be in some measure to disregard the future reputation of the work itself.” He likewise confesses his obligations to the ingenious artists who made the drawings and engravings, “ but particularly to Mr. Strange, not only for having by his hand secured a sort of immortality to two of the plates, but for having given his advice and assistance in every part with a steady and disinterested friendship.”

The plates are not all of them equally interesting or beautiful, but I believe their accuracy has never been disputed. The four first engrav-



engravings by Strange and Ravenet, and those of the Ovum in early pregnancy by Worlidge, are justly admired for their elegance.

In this work Dr. Hunter first delineated the Retroverted Uterus, and the *Membrana decidua reflexa*, or that part of the spongy chorion which is reflected over the foetus, and for the discovery of which we are indebted to him.

After the last plate was finished, he had an opportunity of procuring drawings to be made from a younger embryo than he had till then seen, and likewise from a very curious case of a conception in the Fallopian tube, which confirmed two opinions he had before entertained concerning the Gravid Uterus. It shewed, that the enlargement of the impregnated Uterus does not happen mechanically from the increasing bulk of its contents ; and it proved, at the same time, that the spongy chorion, or *membrana decidua*, belongs to the Uterus, and not to the Ovum or that part of the conception which is brought from the Ovarium. These drawings he intended to have offered to the public in the way of a supplemental plate, or with the description of the anatomy of the Gravid Uterus, a work which he did not live to publish, but which he seems to have almost completely prepared for

the press. This description \* was intended to be printed in quarto, as an illustration of his plates. The two works united would certainly convey as accurate an idea of the anatomy of the Gravid Uterus, as can be acquired without the actual dissection of pregnant women. This anatomical description of the Gravid Uterus was not the only work which Dr. Hunter had in contemplation to give to the public. He had long been employed in collecting and arranging

\* Some idea may be formed of the plan of this intended work from the following view of its contents and their arrangement, written by the author himself:  
 “ Size of the Uterus at Nine Months.—Figure.—  
 “ Situation.—Ligaments, Tubes, and Ovaria.—  
 “ Thickness of the Uterus.—Blood-vessels.—Lym-  
 “ phatics and Nerves.—Muscular Fibres.—Os  
 “ Uteri.—Contents of the Uterus.—Navel String.  
 “ —Placenta.—Membranes Amnios, Chorion and  
 “ Decidua.—Allantois and Urachus.—Liquor Am-  
 “ nii.—Fœtus ; its Situation, Size, Form, &c.—Of  
 “ the Pregnant Uterus in the earlier Months.—How  
 “ far back in Pregnancy my Observations go.—Sub-  
 “ stance of the Uterus softer, more vascular, and rather  
 “ thicker.—The Conception then altogether in the  
 “ Fundus.—State of the Cervix Uteri.—State of the  
 “ Os Uteri.—Uterus not tight nor quite full.—Situ-  
 “ ation of the Ligaments of the Uterus.—Ovarium  
 “ and Corpus Luteum.”

mate-

materials for a history of the various concretions that are formed in the human body. In this work he intended to comprehend not only urinary and biliary concretions, but likewise those which take place in the salivary glands, pancreas, prostate, &c. Of the urinary and biliary concretions he meant to treat at considerable length, because they are by much the most common; of the others, as being less frequent, he intended to treat more slightly.

He seems to have advanced no farther in the execution of this design, than to have nearly completed that part of it which relates to urinary and biliary concretions. Of these he describes the mechanical properties, as their specific gravity, colour, size, shape, &c. and their chymical properties discoverable by experiments. He considers likewise their mode of growth, and adds a short account of their pathology. It is probable that he meant to treat of the other concretions in the same way. This work was intended to be illustrated by engravings. The greater number of these were finished at the time of his death, and are executed with uncommon elegance.

Amongst Dr. Hunter's papers have likewise been found two introductory lectures, which are written out so fairly, and with such accuracy,



that he probably intended no farther correction of them before they should be given to the world. In these lectures Dr. Hunter traces the history of anatomy from the earliest to the present times, along with the general progress of science and the arts. He considers the great utility of anatomy in the practice of physic and surgery; gives the ancient divisions of the different substances composing the human body, which for a long time prevailed in anatomy; points out the most advantageous mode of cultivating this branch of natural knowledge; and concludes with explaining the particular plan of his own lectures.

Besides these manuscripts he has also left behind him a considerable number of cases of dissection; most of them relate to pregnant women, and they are written with tolerable accuracy.

The same year in which the tables of the Gravid Uterus made their appearance, Dr. Hunter communicated to the Royal Society, an Essay on the origin of the Venereal Disease. In this paper he attempted to prove, that this dreadful malady was not brought from America to Europe by the crew of Columbus, as had been commonly

monly supposed, although it made its first appearance about that period.

In order to support this opinion, Dr. Hunter pointed out several inaccuracies in Astruc's testimonies, which contradict his assertion that the venereal infection first made its appearance between the years 1494 and 1496. In particular he observed, that Fulgosius, one of the writers to whom Astruc appeals, positively says, that this disease made its appearance two years before Charles the Eighth's arrival in Italy, which would fix it to 1492. But the authority on which Dr. Hunter laid the greatest stress, was that of Peter Martyr\*, a native of Italy, who went to Spain in 1487, and resided there till his death, which happened in 1525. His talents soon procured him the patronage of the court, and he was appointed one of the council for the direction of affairs in the West Indies. He was the intimate friend of Columbus, and besides other works was the author of a history of the Discovery of America. His letters, which were

\* This writer must not be confounded with another of the same name, and likewise a native of Italy, who was professor of divinity at Oxford, and died at Zurich in 1562.

published after his death, are full of information about the New World, but no where does he take notice of the venereal disease being conveyed from thence, though he often speaks of that complaint as a new disease which had just made its appearance, and which he ascribes, agreeably to the philosophy of those times, to planetary influence. One of his letters, addressed to Arias Luritanus, professor of Greek at Salamanca, who was afflicted with this new disease, is dated in 1489, which was before Columbus even sailed from Spain on his first voyage.

After this paper had been read to the Royal Society, Dr. Hunter, in a conversation with the late Dr. Musgrave, was convinced that the testimony on which he placed his chief dependence was of less weight than he had at first imagined, as many of Martyr's letters afford the most convincing proofs of their having been written a considerable time after the period of their dates. He therefore very properly laid aside his intention of giving his Essay to the public.

In the year 1777, Dr. Hunter joined with Mr. Watson in presenting to the Royal Society a short Account of the late Dr. Maty's Illness, and  
of



of the Appearances on Dissection\*; and the year following he published his Reflections on the Section of the Symphysis Pubis. This Essay, which was first read by the author at one of the quarterly meetings of this Society, contains a great number of useful observations. By sending forth this work Dr. Hunter did not mean to raise a popular cry against this new practice, before it was well understood, for he thought that this would be unfair, and at the same time disrespectful to the ingenuity, and, no doubt, humane intentions, of Messieurs Sigault, Camper, and Le Roy, the authors of the operation. All that he wished for was to see it received with caution, and finally approved or rejected upon solid ground, and at as little expence to human nature as possible.

The merits of this invention have lately been more fully investigated by Dr. Osborn†, who has so clearly ascertained its inutility and danger that it will probably never be attempted in this country.

\* Phil. Transf. vol. 67.

† An Essay on Laborious Parturition; in which the division of the Symphysis Pubis is particularly considered. 8vo. Lond. 1783.

We must now go back a little in the order of time to describe the origin and progress of Dr. Hunter's Museum, without some account of which the history of his life would be very incomplete.

When he began to practise midwifery, he was desirous of acquiring a fortune sufficient to place him in easy and independent circumstances. Before many years had elapsed he found himself in possession of a sum adequate to his wishes in this respect, and this he set apart as a resource of which he might avail himself whenever age or infirmities should oblige him to retire from business. I have heard him say, that he once took a considerable sum from this fund for the purposes of his museum, but that he did not feel himself perfectly at ease till he had restored it again. After he had obtained this competency, as his wealth continued to accumulate, he formed a laudable design of engaging in some scheme of public utility, and at first had it in contemplation to found an anatomical school in this metropolis. For this purpose, about the year 1765, during the administration of Mr. Grenville, he presented a memorial to that minister, in which he requested the grant of a piece of ground in the Mews for the site of an anatomical

mical theatre. Dr. Hunter undertook to expend seven thousand pounds on the building, and to endow a professorship of anatomy in perpetuity. This scheme did not meet with the reception it deserved.—In a conversation on this subject soon afterwards with the Earl of Shelburne, his lordship expressed a wish that the plan might be carried into execution by subscription, and very generously requested to have his name set down for a thousand guineas. Dr. Hunter's delicacy would not allow him to adopt this proposal. He chose rather to execute it at his own expence, and accordingly purchased a spot of ground in Great Windmill-street, where he erected a spacious house, to which he removed from Jermyn-street in 1770.

In this building, besides a handsome amphitheatre and other convenient apartments for his lectures and dissections, there was one magnificent room, fitted up with great elegance and propriety as a museum.

Of the magnitude and value of his anatomical collection, some idea may be formed when we consider the great length of years he employed in the making of anatomical preparations, and in the dissection of morbid bodies, added to the eagerness with which he procured

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additions from the collections of Sandys\*, Hewson†, Falconar‡, Blackall§, and others that were at different times offered for sale in this metropolis. His specimens of rare diseases were likewise frequently increased by presents from his medical friends and pupils, who, when any thing of this sort occurred to them, very justly thought they could not dispose of it more properly than by placing it in Dr. Hunter's museum. Speaking of an acquisition in this way, in one of his publications, he says, " I look  
 " upon every thing of this kind which is given  
 " to me, as a present to the public; and con-

\* See page 14.

† See page 38.

‡ Magnus Falconar, surgeon, was born at Cheltenham in Gloucestershire, in Nov. 1751. He married a sister of Mr. Hewson, and succeeded him as a reader on anatomy in London. He died of a pulmonary consumption at Bristol, March 24, 1778, at the age of 24 years. He was a man of great application and dexterity, and a good speaker. The sale of his collection of anatomical preparations, which included those made by Mr. Hewson, produced upwards of nine hundred pounds.

§ Andrew Blackall, a young anatomist of great abilities, was a native of Ireland, and began to teach anatomy in London in 1778, soon after the death of Mr. Falconar. He died at Bristol Hot Wells, Aug. 14, 1780, of a pulmonary consumption in his 27th year.

“ sider

“ sider myself as thereby called upon to serve  
“ the public with more diligence \*.”

Before his removal to Windmill-street, he had confined his collection chiefly to specimens of human and comparative anatomy, and of diseases, but now he extended his views to fossils, and likewise to the promotion of polite literature and erudition.

In a short space of time he became possessed of “ the most magnificent treasure of Greek  
“ and Latin books that has been accumulated  
“ by any person now living, since the days of  
“ Mead.” This is the character given of the doctor’s library by a learned and industrious writer †, who records an anecdote || which does honour to Dr. Hunter’s skill in bibliography.

\* Letter to Dr. Vaughan, prefixed to the Reflections relative to the operation of cutting the Symphysis of the Offa Pubis.

† Edward Harwood, D.D. in the preface to the *first edition* of his View of the various editions of the Greek and Roman classics. In this preface the author acknowledges his obligations to Dr. Hunter for having been allowed free access to consult any curious editions he wanted to inspect in his museum. In a subsequent edition this and several other passages where Dr. Hunter’s name occurs, are suppressed.

|| “ I have only to regret that I did not happen to

A cabinet of ancient medals contributed likewise much to the richness of his museum. A description\* of part of the coins, in this collection, struck by the Greek free cities, has lately been published by the doctor's learned friend

“ see, till after the article of Theocritus was printed  
 “ off, a very curious *editio princeps* of this poet in Dr.  
 “ Hunter’s museum, in which the doctor, upon care-  
 “ fully collating two copies, as he imagined of the  
 “ same edition, printed at Venice, Gr. fol. 1495, dis-  
 “ covered a material difference not noticed by any bi-  
 “ bliographer. The doctor ingeniously accounted for  
 “ it, by supposing it to be printed from a mutilated  
 “ manuscript, and that Aldus, after having disposed  
 “ of a few copies of this imperfect edition, in the mean  
 “ time meeting with a completer manuscript, supplied  
 “ the deficiency of those copies which remained unfold,  
 “ by printing two or three new sheets, and inserting  
 “ them in the work. This curious circumstance rela-  
 “ tive to this edition of Theocritus, by Aldus, appears  
 “ to have been unknown to the ingenious editor of the  
 “ late Oxford edition of Theocritus, and will undoubt-  
 “ edly induce learned men to inspect this uncommon  
 “ book.” This is another of the passages omitted by  
 Dr. Harwood in a late edition of his work.

\* Nummorum veterum populorum et urbium qui in museo Gulielmi Hunter asservantur descriptio figuris illustrata. Opera et studio Caroli Combe, S. R. et S. A. soc. 4to Londini 1783.

Mr.



Mr. Combe. In a classical dedication of this elegant volume to the queen, Dr. Hunter acknowledges his obligations to her majesty. In the preface some account is given of the progress of the collection, which has been brought together since the year 1770, with singular taste, and at the expence of upwards of twenty thousand pounds.

In 1781, the museum received a valuable addition of shells, corals, and other curious subjects of natural history which had been collected by our late worthy president Dr. Fothergill, who gave directions by his will that his collection should be appraised after his death, and that Dr. Hunter should have the refusal of it at five hundred pounds under the valuation. This was accordingly done, and Dr. Hunter purchased it for the sum of twelve hundred pounds.

The fame of this museum spread throughout Europe. Few foreigners, distinguished for their rank or learning, visited this metropolis without requesting to see it. Men of science of our own country always had easy access to it.—Considered in a collective point of view it is perhaps without a rival.

Dr. Hunter, at the head of his profession, honoured with the esteem of his sovereign, and  
in

in the possession of every thing that his reputation and wealth could confer, seemed now to have attained the summit of his wishes. But these sources of gratification were embittered by a disposition to the gout, which harrassed him frequently during the latter part of his life, notwithstanding his very abstemious manner of living.

About ten years before his death his health was so much impaired, that, fearing he might soon become unfit for the fatigues of his profession, he began to think of retiring to Scotland. With this view he requested his friends Dr. Cullen and Dr. Baillie to look out for a pleasant estate for him. A considerable one, and such as they thought would be agreeable to him, was offered for sale about that time in the neighbourhood of Alloa. A description of it was sent to him, and met with his approbation. The price was agreed on, and the bargain supposed to be concluded. But when the title deeds of the estate came to be examined by Dr. Hunter's counsel in London, they were found defective, and he was advised not to complete the purchase. After this he found the expences of his museum increase so fast, that he laid aside all thoughts of retiring from practice.

This

This alteration in his plan did not tend to improve his health. In the course of a few years the returns of his gout became by degrees more frequent, sometimes affecting his limbs, and sometimes his stomach, but seldom remaining many hours in one part. Notwithstanding this valetudinary state, his ardour seemed to be unabated. In the last year of his life he was as eager to acquire new credit, and to secure the advantage of what he had before gained, as he could have been at the most enterprizing part of his life. At length, on Saturday the 15th of March 1783, after having for several days experienced a return of wandering gout, he complained of great head-ache and nausea. In this state he went to bed, and for several days felt more pain than usual both in his stomach and limbs.

On the Thursday following he found himself so much recovered that he determined to give the introductory lecture to the operations of surgery. It was to no purpose that his friends urged to him the impropriety of such an attempt. He was determined to make the experiment, and accordingly delivered the lecture, but towards the conclusion his strength was so exhausted that he fainted away, and was obliged to be carried  
to



to bed by two servants. The following night and day his symptoms were such as indicated danger; and on Saturday morning Mr. Combe, who made him an early visit, was alarmed on being told by Dr. Hunter himself, that during the night he had certainly had a paralytic stroke. As neither his speech nor his pulse were affected, and he was able to raise himself in bed, Mr. Combe encouraged him to hope that he was mistaken. But the event proved the doctor's idea of his complaint to be but too well founded; for from that time till his death, which happened on Sunday the 30th of March, he voided no urine without the assistance of the catheter, which was occasionally introduced by his brother; and purgative medicines were administered repeatedly without procuring a passage by stool. These circumstances, and the absence of pain, seemed to shew that the intestines and urinary bladder had lost their sensibility and power of contraction; and it was reasonable to presume that a partial palsy had affected the nerves distributed to those parts.

The latter moments of his life exhibited an instance of philosophical calmness and fortitude that well deserves to be recorded. Turning to  
his

his friend Mr. Combe, “ If I had strength enough  
 “ to hold a pen—said he—I would write how  
 “ easy and pleasant a thing it is to die.”

By his will, the use of his museum, under the direction of trustees, devolves to his nephew Matthew Baillie, B. A. and in case of his death to Mr. Cruikshank for the term of thirty \* years, at the end of which period the whole collection is bequeathed to the University of Glasgow.

The sum of eight thousand pounds sterling is left as a fund for the support and augmentation of the collection.

The trustees are Dr. George Fordyce, Dr. David Pitcairne, and Mr. Charles Combe, to each of whom Dr. Hunter has bequeathed an annuity of twenty pounds for thirty years, that is, during the period in which they will be executing the purposes of the will.

Dr. Hunter has likewise bequeathed an annuity of one hundred pounds to his sister, Mrs. Baillie, during her life, and the sum of two thousand pounds to each of her two daughters.

\* In his will Dr. Hunter had limited the term to twenty years, but in a codicil he afterwards extended it to thirty.

The residue of his estate and effects goes to his nephew.

On Saturday the 5th of April, his remains were interred in the rector's vault of St. James's church, Westminster.

Of the person of Dr. Hunter, it may be observed, that he was regularly shaped, but of a slender make, and rather below a middle stature.

There are several good portraits of him extant. One of these is in an unfinished painting \* by Zoffany, who has represented him in the attitude of giving a lecture on the muscles at the Royal Academy, surrounded by a groupe of academicians. Of the engraved prints of him which have appeared, I give the preference to that executed by Collyer, from the portrait by Chamberlin, in the Council Chamber of the Royal Academy. It exhibits an accurate and striking resemblance of his features.

His manner of living was extremely simple and frugal, and the quantity of his food was

\* This picture is in the possession of Mr. Baillie. The portrait of Dr. Hunter is the only part of it that is finished. Of the other figures, Mr. Zoffany had only traced the out-lines, when he embarked for the East Indies.



small as well as plain.—He was an early riser, and when business was over, was constantly engaged in his anatomical pursuits, or in his museum.

It has been said that he was restrained by mere parsimony, from indulging in the luxuries and amusements which captivate the generality of people who reside in this great city. But he seems to have had no relish for them, and contrived to live, in the midst of a crowd, master of himself, and of his own pursuits.—It may with truth be asserted, that he never suffered his œconomy to interfere in matters where the dignity of his character, or the interest of science, were concerned.

There was something very engaging in his manner and address, and he had such an appearance of attention to his patients when he was making his inquiries as could hardly fail to conciliate their confidence and esteem.—In consultation with his medical brethren, he delivered his opinions with diffidence and candour.—In familiar conversation he was chearful and unassuming.

All who knew him allow that he possessed an excellent understanding, great readiness of perception, a good memory, and a sound judgment.

To these intellectual powers he united uncommon assiduity and precision, so that he was admirably fitted for anatomical investigation.

As a teacher of anatomy he has been long and deservedly celebrated.—He was a good orator, and having a clear and accurate conception of what he taught, he knew how to place in distinct and intelligible points of view the most abstruse subjects of anatomy and physiology. Among other methods of explaining and illustrating his doctrines, he used frequently to introduce some apposite story or case that had occurred to him in his practice, and few men had acquired a more interesting fund of anecdotes of this kind, or related them in a more agreeable manner. He had the talent of infusing much of his ardour into his pupils, and if anatomical knowledge is more diffused in this country than formerly, we are indebted for this, in a great measure, to his exertions.

To him, likewise, we owe much of the moderation and caution which now prevail amongst discreet and intelligent practitioners of midwifery, in the use of instruments. “ I admit—said he in one of his latest publications +—

+ Reflections relative to the operation of cutting the Symphysis of the Ossa Pubis.

“ that the forceps may sometimes be of service,  
 “ and may save either the mother or child. I  
 “ have sometimes used it with advantage, and,  
 “ I believe, never materially hurt a mother or  
 “ child with it, because I always used it with  
 “ fear and circumspection. Yet, I am clearly  
 “ of opinion, from all the information which I  
 “ have been able to procure, that the forceps  
 “ (midwifery instruments in general I fear) upon  
 “ the whole, has done more harm than good.”

In his lectures he had uniformly delivered the same excellent sentiments.

How much he contributed to the improvement of medical science in general may be collected from the concise view we have taken of his writings.

The munificence he displayed in the cause of science has likewise a claim to our applause.  
 —Persons of an invidious turn of mind who seek to depreciate his merit in this respect, may perhaps endeavour to trace the motive by which he was actuated, and ascribe to vanity what deserves rather to be considered as a commendable love of fame. It is certain that Dr. Hunter sacrificed no part of his time or his fortune to voluptuousness, to idle pomp, or to any of the common objects of vanity that influence



ence the pursuits of mankind in general. He seems to have been animated with a desire of distinguishing himself in those things which are in their nature laudable ; and being a batchelor, and without views for establishing a family, he was at liberty to indulge his inclination. Let us, therefore, not withhold the praise that is due to him ; and at the same time let it be observed, that his temperance, his prudence, his persevering and eager pursuit of knowledge constitute an example which we may with advantage to ourselves, and to society, endeavour to imitate.

T H E   E N D.

A

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I have the honor to acknowledge the receipt of your letter of the 11th inst. in relation to the above matter.

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Yours faithfully,  
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Very truly yours,  
[Signature]  
[Name]  
[Title]



T O

*Sir Richard Jebb*, Bart. M.D. F.R.S. & S. A.

PHYSICIAN EXTRAORDINARY to His MAJESTY, &c.

S I R,

THERE is no one to whom I can with so much propriety address this little work as to you, because no person can be a better judge than yourself of the necessity for early care, to prevent the complaints it treats of, as you have had the most extensive practice, with the most distinguished success in curing them. Besides, the friendship which you had for my worthy patron Mr. Collins, and the many kindnesses which you have shewn to me, demand it as a tribute of gratitude from,

S I R,

Your most obedient,

And most devoted humble Servant,

THOMAS HAYES.

*Hampstead.*  
*March 30, 1785.*



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T H E

P R E F A C E.

**I**T is unnecessary to inform the Public, of the numbers of persons of both sexes, that are afflicted every Winter, with most dreadful colds, coughs, and consumptive complaints, in this great metropolis, and every large town in this kingdom, from the neglecting of slight colds in their early state. But common as this case is, the truth of which most men acknowledge; is it not strange that it should not be striking enough to enforce a stricter attention to it, than is paid in common? For its consequences are not less (to speak within compass) than an annual loss of twenty thousand persons in the island of Great Britain; besides

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the numbers, who suffer long and painful illnesses, from rheumatisms, pleurifies, quinries, &c. arising from the same neglect, and afterwards recover.

Physicians, from the earliest date, have cautioned the public against letting colds gain ground upon them ; but as few read their writings, except those who make physic their profession, and as the world often suspects, that what comes from them must be interesting to themselves only, I do not wonder that this caution is not always regarded. It has always been difficult to persuade men of their true interests, or we should not have found *Inoculation* so slow, in advancing to the confidence and use we now see it with the people ; but through the means of the learned and judicious Baron Dymisdale, it is become familiar and safe, and a great friend to health and beauty. The *Humane Society*, through the indefatigable zeal of Dr. *Hawes*, becomes also daily more and more conspicuously useful, in restoring,  
numerous

numerous members to the state; notwithstanding the many prejudices which long prevailed against it. Facts, sooner or later, will support themselves, though we have shewn above, that they are sometimes slow; we therefore hope, that the object of the present trifle will be attended to in the course of time, and the more especially, when it shall appear, to have been undertaken, the very opposite to interested motives! For were the enclosed hints strictly pursued, the author would have very little business, and half his brethren of the faculty, must then be obliged to seek some other means, of earning a livelihood.

Two very sensible writers, Tissot and Buchan, have addressed themselves to the public in general on the subject of medicine, and many excellent directions they have given respecting the management of colds, and other diseases; but on this subject, they have not entered so fully as we think the disorders required; and in

others they have not confined themselves within such limits, as to be of use, without injury: Hence this little tract may not, perhaps, be without its use, as a companion to their celebrated works; for beyond a common cold, or a slight fever, persons are not competent to direct for themselves.

It requires an arrangement, and comparison, of the several constitutions, and symptoms, together with a number of other minutia, which are not to be acquired, but by experience, and a knowledge of the animal œconomy, and with which very few but medical men, are acquainted.

The works just now alluded to, are more calculated to inform young practitioners in medicine, and men of letters, than for the people in general, who have not an opportunity to study the leading characters which are to distinguish one disease from another; for this is often  
attended



attended with difficulty, and mistakes are sometimes made, even, by men eminent in the profession. It is well known, that physicians never prescribe for themselves. The embarrassment of mind, and a number of deceitful symptoms, that attend the sick, must for ever render it impracticable for him to be a competent judge of his own disease; and the several changes and complications to which it is liable, serve still to encrease the difficulty. How then, shall the many ignorant persons, to whom the above-mentioned books are left open to, wherein many very potent medicines are recommended, be thought equal to the task of prescribing, either for themselves, or for their neighbours; whom they cease not on all occasions, from urging to take Dr. James's Powder, or any other favourite medicine, let the complaint be ever so different from what they conceived? Certainly, the application of such powerful medicines, requires the most judicious medical ability and experience.

Now

Now, to such as have a propensity to prescribe for the sick, without being very well acquainted with the nature of the disease, and the full powers of the medicines they apply, (except upon emergency, and where other advice is not readily to be had) we would most earnestly recommend to read the *sixth commandment*, and reflect, that by administering powerful drugs, much hazard is run, and many melancholy disasters have happened. We believe it to be well intended, but cannot imagine it not to be wicked. The number of errors which perpetually are made, none but medical men can conceive.

The intention of the present sheets, is to convince the public, of the danger of depending too much upon that fatal expectation of colds going off spontaneously: of trifling with little complaints; and of trusting to such means as are not likely to remove them.

We

If a cold comes on with any violence, apply the means here recommended for three or four days, if the patient does not get materially worse before, or the complaint abate in that time, send for the best assistance in your power; if you are not able to send for a physician, let it be an apothecary of a humane, and tender disposition; and one, who studies more to remove the complaint, than how he shall load you with a number of phials.

Such was my worthy friend and patron Mr. George Collins, surgeon, who was revered and loved by all who knew him. For knowledge in his profession, few surpassed him; in goodness of heart, fewer equalled him; and in his death, the rich and poor had an inestimable loss. He was the learned man's companion, and the poor man's friend; all Hampstead, with one accordant voice declare, they

“Ne’er shall see his like again.”

I cannot



I cannot forbear embracing this opportunity, to pay so just and grateful tribute to his memory.

A man of the above principles, will not unnecessarily load you with nauseous drugs, nor will he add to the calamities of the poor tradesman, by extravagant charges, which is too often the rapacious practice of the profession.

To this will be said, ought not every man to live by his business; we fairly admit it, and most certainly expect to do so ourselves. To the sharks of the profession we allude, and not to the honest, candid, humane practitioner, who feels for others ills, and others circumstances.

We have made two very long quotations, which most feelingly illustrate, and confirm our opinions, and which we think cannot be too commonly known. The one was written by the celebrated Dr. Huxham,  
of

of Plymouth; and the other by the late Dr. Fothergill; and the reason why we have given them so long and full, is, such persons as this little work is designed for, have not a medical library to consult, and it would be needless to recommend them by their titles only.

The handsome manner which all the Reviewers have spoken of the First Edition, naturally caused it a rapid sale. This last has waited for the additions that are made, which I hope will equally meet with their approbation, as well as be serviceable to such persons as are inclined to become consumptive.

To Dr. John Jebb, F.R.S. I am highly obliged (tho' unknown to him) for a very polite letter of approbation of the whole pamphlet, except in one part which I shall gladly correct; the genteel manner which it was sent to me, and the philanthropy which he has shewn in this

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small act, is a strong proof of the goodness of his heart and principles.

After what has been advanced in the first part of the Preface, it may seem strange, that I should attempt to prescribe beyond a common cold, my reasons for it are,

First, Because many persons have desired me to make the additions which are here.

Secondly, I have taken great care to advise such things only as cannot do injury, used with the precautions here directed.

Thirdly, I have been more minute in some very essential means of recovery, than medical men's time, in much practice, will permit, and I expect more attention from addressing myself to the understanding than a mere injunction.

Fourthly,



Fourthly, I have taken more pains to shew what is injurious than what is beneficial, at the same time hoping that no person will depend upon my book, only, for the cure of so dangerous a disease, but rather offer these additional reasons to warn the reader of the dangers which attend neglected Coughs and Colds, and to induce those who have unhappily got bad ones to apply a simple, rational and approved method of cure in preference to the thoughtless, imprudent means generally taken.

The author has much occasion for indulgence from his critical readers, to look over many imperfections which they may find; as his professional avocations will not permit him to attend much to correctness in writing, and he hopes that the object of the present work, will fully clear him of any other vanity, than that of desiring to be useful to his fellow creatures.



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A

Serious A D D R E S S,

&c. &c.

A COLD arises from the effect of cold, or moist air, applied to the surface of the body and lungs, from going too thinly clad, or exposing the body to cold air, after having been heated by exercise; or, when the pores are opened from drinking warm liquors.

Some persons will bear every possible change without much injury, whilst others cannot take the least liberty with themselves without suffering most severely. Therefore, every man should know enough of his own constitution, to regulate himself, as, indeed, he, in this respect, may, if he will but give himself the trouble to think, and from hence, whatever



whatever experience has taught him as improper, or as disagreeing with him, he should most carefully avoid.

Almost every body knows the symptoms of a cold, or what are the common sensations, or effects of what is called *the having a Cold*; but as these begin on some more violent than in others, we shall give the common symptoms as they generally arise.

A Cold then, is a sense of chilliness on the skin, attended with a lassitude or weariness, and slight shivers at times, with a degree of headach, and flying pains in the limbs, a stuffing of the nose, frequent sneezing, and running of a clear limpid water from the eyes, and the nose, with, or without, a dry tickling cough, or hoarseness. Sometimes the sneezing, stuffing of the nose, or cough, give the first intelligence of its approach, and sometimes it is preceded by some of the other symptoms. These, as they are found to come on with more or less violence, permit the patient to continue in his usual employment, or pleasure, until they get so far increased, or have laid such hold on the constitution, as to oblige him to desist, unless nature, by some happy effort, restores the obstructed vessels to their proper

proper offices, and cause the several fluids to be circulated through the proper tubes. If the patient is not relieved this way, Fever, Rheumatism, Inflammation of the Lungs, or some other disease must ensue.

As coughs are the most common and violent effects of cold, and so commonly disregarded, and as these are the most insidious attendants, and capable of bringing on the most serious complaints, we cannot too strongly enforce a proper sense of the danger that attends them. Inflammation in the lungs is excited, by the perpetual action which is given to the chest by coughing; and great injury is done to the fine membrane, which lines, or covers, the passage to the lungs, and the whole cavity of the chest, as well as the lungs themselves, from the same cause. The least inflammation happening to the pleura, or lungs, is very much to be feared, may pave the road to consumption and death; and we will hazard our reputation, if three parts of the consumptions, which happen, do not take their rise from these commonly neglected trifling coughs, as they are but too commonly called, causing inflammation, &c.

It is not unusual for a patient to tell you, that he ails nothing, except having a cough; when, in fact, his pulse is full, quick, and hard; his tongue coated with a thick white fur; and he makes thick muddy water, or such as is very high coloured; he has cold chills running down his back, soreness in the chest, and on the muscles of the belly, besides other symptoms of fever; but he will insist he has not the least fever, and that the cough is the cause of all these symptoms, if he happens to be informed of them; but it sometimes happens, that all these are disregarded, till he is obliged to take to his bed; for he persuades himself he cannot be feverish, because he feels himself cold; and, to remove which coldness, he continues to drink warm cordials, or hot spicy drinks; and, because he has no appetite, he eats rich relishing things, as he thinks to give him one, and to keep him from being starved; all of which have a full tendency to encourage, or create, inflammation, and would be the direct means to employ for that purpose, to an enemy, were one disposed so to do.

By these improper things, a trifling cold, in the first instance, is increased, and a fever and inflammation is caused; and especially if the person



person is full of blood, and been used to *live* what is called *well*. The many varieties of the symptoms, and danger attending them, depend greatly upon the age, strength, and constitution of the patient, and the manner in which he has lived; for a person who has been accustomed to eat hearty suppers of gross animal food, and drink strong, viscid liquors, may be cut off in the course of a few days; while a thin, spare, or more delicate person, will linger many months, in consequence of having fewer materials in the habit for violent inflammation. The late Sir John Pringle, a distinguished ornament of his profession, says—"Diseases, arising from cold, are all of the inflammatory kind, viz. coughs, pleurifies, peripneumonies, rheumatic-pains, and the like, together with consumptions, which, in the army, are almost always owing to neglected colds."—And we are well assured, that it is so in the cities of London, and Westminster. In confirmation of which, permit me to lay before my readers, part of a valuable paper, written by the late Dr. Fothergill, upon this subject.

"The most trifling cold or cough, says he, if it continues, may either advance gradually, till it ends in immediate mischief, or may

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"leave

“ leave such impressions as may subject the  
 “ patient to frequent returns: a cough, there-  
 “ fore in children, or young persons, or in  
 “ persons of a certain make at any time of life,  
 “ ought speedily to be cured.”

The way in which Colds do injury to the lungs and other parts, and so lay a foundation for future mischief, is, by the action of cold upon the *very* fine vessels, which occasion obstruction, and a little degree of inflammation, but not violent enough, at present, to be very observeable; but such a degree of tenderness is left on the part affected, that often establishes an habitual cough, which is rendered more troublesome and dangerous by every additional cold; and which, sooner or later, causes the death of the patient, unless that care is taken which we wish to point out, as necessary to prevent it. It is observed by Dr. Fothergill, that a cough, in persons of a *certain make*, should speedily be cured, and for this reason; such as are tall and thin, with long necks, flat chests, and with shoulders sticking out like wings, and otherwise of a delicate texture, are the most common victims to consumptions, and are what he means by a *certain make*: and, for the generality, those who  
 are

are said to be born of consumptive patients, or those who often, indeed, die of what is termed hereditary consumption, mostly answer this description, and are of that *certain make*, just now alluded to, and which is found to run thro' whole families. To such persons we cannot but recommend the greatest care, as colds on them commit the greatest ravages, and are always very susceptible of the least impression. It requires, we very well know, more persuasion than we are masters of, to lessen this common, but fatal, inattention: but, lest we should be suspected of having represented danger in too high a degree, and of having given an opinion not well founded, we shall give a continuance of that excellent paper of Dr. Fothergill's, wherein he so feelingly expresses the distressing situation to which neglect subjects the human constitution, that any who ever read it, we hope, will always bear it strong enough in their minds, to make them carefully avoid every tendency to such neglect.

“ I know, gentlemen\* (says Dr. Fothergill)  
 “ that you (addressing himself to a Society of

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\* See Medical Observations and Inquiries, vol iv.



Physicians) as well as myself, often have  
 “ occasion to look back at the fatal neglect,  
 “ committed both by the sick themselves, as  
 “ well as those who ought to have had their  
 “ future health more at heart. With what ease  
 “ would many of the most incurable consumptive  
 “ cases have been prevented, or cured, at their  
 “ first commencement? A person whose  
 “ emaciated figure strikes one with horror, his  
 “ forehead covered with drops of sweat, his  
 “ cheeks painted with livid crimson, his eyes  
 “ sunk, all the little fat that raised them in  
 “ their orbits, and every where else, being wast-  
 “ ed; his pulse quick, and tremulous, his nails  
 “ bending over the ends of his fingers; the  
 “ palms of his hands as dry as they are pain-  
 “ fully hot to the touch; his breath offensive,  
 “ quick, and laborious; his cough incessant,  
 “ scarce allowing him time to tell you, that  
 “ some months ago, he got a cold; but,  
 “ perhaps, he knew not how he got it, he  
 “ neglected it for this very reason, and neglected  
 “ every means of assistance, till the mischief was  
 “ become incurable, and scarcely left a hope of  
 “ palliation. You see multitudes of such objects  
 “ daily, and see them with a mixture of anger  
 “ and compassion, for their neglect and their  
 “ sufferings. Excuse me for trespassing in this  
 “ manner

“manner on your time and your humanity,  
 “Though it is not in your power to prevent all  
 “these sacrifices to ignorance and inattention;  
 “yet, if the faculty combine in prompting  
 “their fellow citizens to necessary care, and  
 “prompt them to suffer no slight beginnings to  
 “pass unregarded; however they may be  
 “acting against their own interest, they will  
 “have the satisfaction of contributing to the  
 “preservation of many a useful life; for,  
 “perhaps, among those who perish by consump-  
 “tions, there are many who, in respect to the  
 “excellencies both of body and mind, have  
 “given indications of becoming conspicuous  
 “ornaments of humanity.”

Can there be a more affecting picture of a  
 common and distressing scene, and shall one see  
 the same want of care continue to prevail, after  
 such a pathetic and feeling exhortation? Yet,  
 we very much fear, from the numbers that ap-  
 ply to us in the last stages of the disease, without  
 ever having been confined to any particular or  
 proper regimen, that the fault does not always  
 lie with the sick only,

We have clearly proved the great danger  
 that arises from neglecting coughs and colds;

we shall next advise a plain and simple method of cure, and which is in every one's power to make use of; if they begin very violent, or continue long, trust not too much to your own advice, but seek the best you can. If you are poor, there are numbers of Hospitals, Dispensarys, &c. in the metropolis, always ready to give the best directions; and, if in better circumstances, it will be found a folly to put it off.

As some of my readers may wish to know how cold air proves injurious to the constitution, and as it may furnish an additional caution for them to avoid exposing themselves more than is necessary, particularly those persons who have tender lungs, we shall give the manner as plain as possible.

The human body, is furnished with an innumerable set of very minute vessels, which open their mouths, or beginnings, on the external part of the skin, all over the frame; and these communicate with every part of the body internally; these vessels are what are called the pores; they carry a moisture out of the constitution, called insensible perspiration, and the sweat, which is sensible; the insensible perspiration is constantly and invisibly exhaling  
from



from every constitution in health in very large quantities, even to the amount of five or six pounds, every twelve hours, in adult persons. The lungs are furnished with a very large quantity of it, which is very visibly seen on glass, or in a chaise, and which is thrown out by every respiration; every part of the chaise being equally moist at the same time, though the glass only points it out.

\* Cold and damp air has the peculiar property of causing a spasm, or some other means of acting upon the vessels, or nerves, surrounding them, so as to close up their mouths, and prevent the natural and necessary discharge of perspiration, sometimes over the whole body, and some-

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\* I am sorry that so great a physician as Dr. Heberden should conceive so strange an idea as to suppose that wet rooms, damp beds, linen, &c. should not produce mischief to the human body, an idea which every day's experience proves to be erroneous and very destructive to health. I have been collecting cases for these twelve years past, in support of this opinion; for the greatest geniusses are misled by Theory, as the deservedly Dr. Heberden has been in this particular, which I shall shew at some future opportunity.—See *Medical Transactions*, Vol. 2.

times but in parts; and wherever this happens, the evil is presently felt by the patient. If it is only in one particular part, as in a fore throat, stiff-neck, inflamed eye, or pains in any one particular place, it is termed local, and does not always affect the health; but if it happens in a larger degree, the health becomes injured from sympathy, or consent of parts, if not from general disorder. If much of the insensible perspiration is thrown into the habit, or, in other words, if much of the skin is obstructed, so as not to have a proper circulation, cold chills, and a sense of cold water being poured down the back, and loins, is presently felt; pain in the limbs, slight headach, and a kind of lassitude, or weariness, comes on, and is succeeded by fever, more or less.

As the lungs, and passage to them, are most exposed to cold, moist or noxious air, they, the most frequently, receive the first impression; then the cough is the harbinger of the effect, and inflammation either arise from the spasm on the part, in the first instance, or from the degree of agitation which is given to the chest, by the act of coughing. We see one remarkable effect of confined perspiration in colds in the eyes, nose, and throat, of the serum or lymph which

which is discharged, of contracting such a degree of sharpness and acrimony, as to scald the parts it comes in contact with; it is this which irritates the upper part of the wind pipe, and causes the perpetual coughing; and, perhaps, it is this kind of irritability, which may be the internal cause of fevers in general. And from hence it appears, why colds sometimes are easily cured, having more or less of this acrimony, and why they become so dangerous, sometimes, from trifling neglect, or after having indulged in heating spirituous liquors, &c. and from hence the absurdity of the adage of “*feeding a cold*, whatever justice there may be *in starving a fever*,” clearly appears.

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## CURE OF COLDS, COUGHS,

&c. &c.

**I**N curing colds, three things are essentially necessary; to open the obstructed pores, to discharge any irritable matter out of the constitution, and to observe such a kind of diet, as shall consist of a mild and innocent nature, and such as is calculated to prevent fever, and inflammation, and at the same time be conducive to recovery.

As soon as a cold, or cough, is found to come upon a person, he should immediately lessen the quantity of his food; it should consist of suppers moderately warm, especially at night, such as small broths, water gruel, and the like; the solids should be rice, sago, light puddings, fruits and vegetables; the drinks should be barley-water, small beer, apple-water, lin-feed tea, toast and water, or any other cooling liquid, that is void of the irritable, or heating qualities.

A friend of the author's, as soon as he finds a cold come upon him (and he is very much exposed to the inclemency of the weather, from the nature of his business) confines himself entirely to this kind of plan, particularly to water, gruel, sweetened with honey, and which never fails to carry it off in a few days; he never is kept close to his house, but by attending to it early, prevents mischief, which would otherwise ensue; and most simple fevers, as well as colds, might be removed by such early attention and prudent care.

Perhaps it will be asked, is a man, with every trifling cold or cough, to lay himself up, and keep his house or bed? if so, he may be always nursing and coddling himself, neglect his business, and other important concerns. To which I reply, there is a medium to be observed in every thing; the time for confinement to the house must always depend upon the state of the disease, neither is it always necessary to be confined at home for a cold; but suppose I really thought it, no prudent man, when he comes to consider seriously, that he stakes his health, and, perhaps, his life, to a day or two's confinement at home, or retrenching himself from rich food, wine, or heating things, will think

think much of the penalty to prevent it; for to enjoy good health, is the most important concern of human life; riches, honour, and power, are burdens without it; therefore every prudent means of obtaining it, is an indisputable duty implanted in our nature; and nothing more contributes to that end, than attending early to slight colds, in order that they may not prove the source of greater mischief. If on approaching the cold air, it causes a violent coughing, it is necessary to keep in a warm room till the tenderness of the lungs is gone off, otherwise, except in the case of fever, it is not requisite to be kept to the house, but to attend to the diet, warm suppers at night, &c. which we shall mention elsewhere.

Fevers and colds become heightened by the continuing to eat animal foods, rich sauces, and drinking of wines and spirits, which are designed to support animal strength, and furnish the body with activity and fire, for exercise, pleasure, or business, and now, instead of being wholesome and friendly to the constitution, become its enemy, and nourish fever and inflammation. For this reason the All-wise Creator has deprived us of appetite in fevers, and rendered food loathsome



loathsome to the sight; the cooling fruits and vegetables, and preparations of them, possess more nourishing properties than is commonly believed; these were the physic of the primitive physicians, and many of the moderns who are the greatest ornaments to this country, perform the greatest cures by a judicious adoption of them. Boiled turnips, roasted apples, asparagus, falfafy, scorzenera, lettuces, colliflowers, brocoli, &c. possess many saponaceous, cooling and antifebrile principles, which correct the blood and juices, dissolve obstructions, and will do \* more in eradicating the scurvy, and other foulnesses of blood of that nature, than all your Norton's Drops, Frankfort Pills, Mercurials, Antimonials, &c. in the nation, and that perfectly innocent, which we wish we could say was always the case with those just mentioned.

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\* At some future period, we propose to offer to the public, some observations on many neglected efficacious simples of this kingdom; for, while we are traversing from pole to pole, in search of new medicaments, we are neglecting many very valuable ones at home. We could wish such an essay from a more able pen, but perhaps the attempts of the *little* may excite the efforts of the *great*.

The above kinds of nourishment, together with a plentiful dilution of soft drinks, involve the floating acrimony, and lessen the spasmodic affection, and tend to promote perspiration. Small wine, or lemon or vinegar wheys, amazingly contribute to this end; if they are made too strong of wine, or spirits of hartshorn, &c. they heat and stimulate, and have a very contrary effect to what was intended, the patient is hot, burns, and is restless, instead of having a moist skin and a refreshing and balmy sleep.

Bathing the feet in luke-warm water, or bran and water, that is a little hotter than milk just taken from the cow, going to bed, is an excellent simple mean of producing a regular circulation, and gentle perspiration. Great caution is necessary here, not to get fresh cold; the feet should be carefully and speedily wiped dry, and afterwards wrapped up in a warm dry flannel, and the patient to go immediately into a warm bed. If the water is too hot, it proves a great stimulus, and does injury, and if cold can do no good. It is no uncommon thing for persons that drink gruel, and other warm liquids, to promote perspiration, that they take them before they undress, by which means, if it happen to be cold weather, they get fresh cold in undressing

dreſſing, for the warm drinks make them often break out into a ſweat, which becomés check'd before the patient gets into bed. We would therefore adviſe them to be taken after the patient is in bed, and then for him to lie down immediately, and to keep ſtill and quite for ſome time, and no doubt but the expectation will be gratified.

If the patient has a cold, attended with ſtuſſing of the noſe, a cough, and hoarſeneſs, let him receive the ſteam or vapour of a large pan of warm water, wherein a few camomile flowers, or elder, or roſemary, have been boiled; this ſteam ſhould come in contact with the whole head, and face, and be continued for a full quarter of an hour, or more, and ſhould be kept hot by freſh ſupplies of hot water being put into the pan; the whole ſhould be covered with a flannel, or ſome other warm cloathing, to prevent cold air coming at the ſame time, and, after this proceſs is over, the ſame care is neceſſary to keep the perſpiration from being checked; the patient ſhould breath through a handkerchief, that the cold air may be firſt warmed, before it gets to the lungs; if the complaint is only about the head and throat, and no cough attends, a  
little



little vinegar added to the other ingredients may be of use. The bathing the feet does neither preclude the warm drinks or this remedy being made use of.

If the cough is the most troublesome complaint, besides the means just mentioned, the patient must be perpetually taking soft, mucilaginous drinks, prepared by the boiling of quince-seeds in water, and sweetened with honey, or sugar-candy, to the palate, or linseed-tea, a decoction of barley, figs, and raisins, &c. A tea-spoonful of Paregoric Elixir, or syrup of white Poppies, in half a pint of either of them, may be taken by spoonfuls; which will sheath the passage to the lungs, and quiet the cough; currant jelly, and some of the soft marmalades, contribute to the same end; rob of elder, is a most excellent medicine for this purpose, and is aperient, sudorific, and cooling, is preferable to spermaceti, and oily medicines, in general. But as oils and spermaceti have sometimes their use, we would recommend them not to be taken in large quantities, as they are too often done, because they turn rancid upon the stomach; when they are thought proper, the following smooth emulsion is thought excellently good, as thus;

Take

Where ever paregoric elixir is recommended, I would wish it to be understood, that whenever there is much heat, and opiates are thought proper, that the preference should be given to the syrup of white poppies, or a few drops of laudenum as the elixir is prepared with spirits of wine and might be too heating. This observation I own escaped me, and I am indebted to Dr. John Jebb, F. R. S. for this necessary hint. For while we are wishing to do good, it should be our principle object not to do harm.

Take of barley water, six ounces by measure, white sugar, and powder of gum arabic, of each three drams, incorporate the sugar and gum arabic together in a mortar, with a small quantity of the water, and gradually mix one ounce of fresh and sweet oil of almonds, linseed, or oil of olives, and then by little at a time, add the rest of the water, and it will be a soft white emulsion.

If opiates are proper, half an ounce of syrup of white poppies, or paregoric elixir, may be added, which will be shewn when we come to speak of opiates. A dram or two of spermaceti carefully mixed with the same quantity of

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gum

gum arabic, after the same manner, may be prepared into an emulsion, and is better than dissolving it with an egg, and not so apt to turn rancid. An excellent emulsion may be prepared of white poppy-seeds, or blanched sweet almonds, which will not only serve as such, but is nutritious and cooling, and very good in fevers of the inflammatory kind, the which is prepared thus:

Take of almonds blanched fresh and sound, or of white poppy-seeds, two ounces, beat them in a marble mortar with the same quantity of sugar, till they are smooth, adding a small quantity of water to facilitate that purpose, a quart of Bristol, or pure water, or barley water, may be added to these ingredients, and strain it through a muslin rag or fine sieve, and then it is fit for use; if it is required to be more mucilaginous, an ounce of gum arabic may be dissolved in it; half a pint of it taken a little warm now and then wonderfully sheaths the sharp mucus, and dilutes the acrimonious juices in the first passages.

We have already spoken of one species of inhalation, viz. the vapour from a pan of  
water



water and camomile flowers, but to answer a different purpose than what we are now going to advise another. The great Boerhaave, Baron Van Swieten, and the late Sir John Pringle, very strongly recommended the receiving of warm vapours to the lungs, in coughs and complaints of that organ; our experience, if of any weight after such authorities, fully admit the fact and confirm the veracity and usefulness of them. Mr. Mudge, a very ingenious surgeon at Plymouth, has lately published a book, describing a machine which conveys the vapour very commodiously to the lungs, which he calls an Inhaler, wherein he declares, that the use of a tea spoonful of paregoric elixir, taken at bed-time in some warm liquid, and the use of the warm vapour of simple water through his machine, will cure a catarrhus cough in a night's time. The public are much indebted to Mr. Mudge for his ingenious invention, but many of the poorer sort of people cannot afford to pay half a Guinea for it, a price certainly extravagant for so simple a machine; we could wish the poor to receive the advantages of health equal with the rich, and the means of becoming so, when they unhappily want it.

Every cough, whether moist or dry, attended with or without inflammation, receives benefit from the use of the inhaler, as also pleurifies, fore-throats, asthmas, and in every affection of the chest, except in spitting of blood. Mr. Mudge recommends the vapour of warm water only, but we believe that many different herbs, boiled in water, would furnish certain useful virtues to particular cases. Indeed Sir John Pringle says, in his diseases of the army, that Dr. Huck, now Dr. Richard Saunders (a name as respectable as any among those who practice physic) had found great benefit from the addition of a little vinegar, where tough plegm abounded.

Nothing can more strongly recommend the act of inhalation than the following quotation from the very eminent Dr. Huxham, and as it confirms and supports our opinions, as to this and some other parts of our treatment, we beg leave to give it to our readers, in its full length as follows :

“ But nothing more effectually promotes ex-  
 “ pectoration, (by attenuating and resolving the  
 “ impacted matter) than drinking freely and  
 “ frequently of cooling, relaxing and gently  
 “ saponaceous liquors ; such as thin whey, the  
 “ barley



“ barley ptisan, with liquorice, figs, &c. the  
 “ decoction, or rather infusion, of the pectoral  
 “ herbs, as ground-ivy, maiden-hair, colt’s-  
 “ foot, hyssop, &c. these should be gently aci-  
 “ dulated with juice of lemon, or Seville-  
 “ oranges; if any thing more detergent in the  
 “ above drinks is wanted, honey may be added,  
 “ an admirable natural cordial soap, thrown  
 “ almost out of the modern *Materia Medica*,  
 “ I know not why, nor how, for where it gripes  
 “ or purges one, it agrees with a thousand,  
 “ and even its griping and purging quality  
 “ may be easily corrected by boiling. Hip-  
 “ pocrates used oxymel and mulsum in such  
 “ cases, and advised against drinking mere  
 “ water, in pulmonic cases, as neither good  
 “ for the cough, nor to promote expectorati-  
 “ on;—any of all these things by turns drank  
 “ warm, answer the above intention exceedingly  
 “ well, if taken in frequent but small quanti-  
 “ ties, sipping them as it were perpetually; for  
 “ by this means much of the relaxing and re-  
 “ solving vapour is also drawn into the lungs,  
 “ and much of them absorbed by their imbi-  
 “ bing vessels, so that the relaxing and diluting  
 “ is thus carried on in a double manner, and  
 “ of course very effectually. Very large  
 “ draughts



“ draughts should not be taken at once; for  
 “ they overcharge the stomach, produce indi-  
 “ gestion and flatulence, and force up the mid-  
 “ riff too much, which greatly embarrasses the  
 “ respiration; therefore Hippocrates advises  
 “ to drink in those diseases, out of a cup with a  
 “ narrow mouth, probably both that the liquor  
 “ and vapour might be preserved warm longer  
 “ and that less might be drank at a time, and  
 “ also that the steam might be more copiously  
 “ carried into the mouth and nose.—Many  
 “ kinds of drink he advises for this purpose,  
 “ but particularly recommends barley-water,  
 “ honey and water, oxymel and vinegar and  
 “ water.”

From hence it appears that warm vapour is  
 considered to be of signal benefit; but we  
 would not recommend any other in simple  
 coughs or colds, than the vapour from water  
 in which have been boiled camomile, or elder-  
 flowers, milk and water, marsh-mallow tea, or  
 some such simple things. There is a liquid ad-  
 vertised, called Stern's Æther, which we think  
 too irritating for the case we now recommend.  
 For the great intention of inhaling, is to relax  
 the rigid or irritable membrane that lines the  
 trachea,

trachea, or passage to the lungs, to sheath the parts that are excoriated by the sharp mucus, or to lessen the sharpness of that mucus, and cause it to be more easily spit away.

The cold air should be carefully prevented from coming to the lungs after having inhaled; it is better done in bed than up for this reason, and because it generally promotes perspiration. In trying to do good we should be careful to avoid every thing that may prove injurious.

If a cold be at all severe, nothing can so soon contribute to lessen that severity, and prevent a fever, as gentle purging; we prefer the mild simple things, to such as are more active and violent, for it is not the very great number of motions that are procured, that gives the expected relief, as the stronger purges hurry through the bowels, and do not carry the irritating causes out of the body, nor do they tend to cool the blood and juices, and thereby prevent both fever and inflammation, which is the material object we should have in view. Manna, and Glauber's-salt, cream of tartar, tamarinds, rhubarb, and sal polychrest, lenitive electary, or indeed any other gentle cooling means, which  
the

the patient has been accustomed to use, will be right to have continued. The following mixture is very well calculated for this end, and will agree with most constitutions:

Take of Epsom, Glauber, or Rochelle salt, one ounce, boiling water, or simple pepper-mint-water, four ounces, tincture of rhubarb, or of senna, one ounce and half; mix. Half or a third of the whole may be taken in the morning, and repeated once in two hours till a motion or two are procured. An ounce of manna may be added to it, if the patient pleases. As a person, hard to purge, can take the whole of the above mixture, it must be properly proportioned to such as are more easily moved.

Such as cannot take a liquid, may use the following pills, and dilute with barley-water, warm tea, or water-gruel.

Take of rhubarb in fine powder, sal polychrest, of each one scruple, calx of antimony unwashed ten grains, of syrup of buckthorn a sufficient quantity to make eight pills, four of which may be taken at night; and the rest



rest in the morning, if no effect is produced before; if these should not be found quick enough, for any particular constitution, a few grains of extract of Jalap may be added.

Of such as are used to take an electary, cream of tartar, and lenitive electary, mixed together, will often answer the purpose; a tea-spoonful taken night and morning, so as to procure two motions a day is very sufficient.

After the body has been sufficiently opened, (or indeed before, if the symptoms are pressing) that is, if there be much fever, pains in the limbs, head, or back, the cough hard and troublesome, or there be any darting pains in the chest, or under the breast-bone, or if the muscles of the belly be made sore by the perpetual coughing, bleeding is absolutely necessary, for these pains denote inflammation having seized some part, and as nothing stops the progress of inflammation so much as bleeding, from six to ten ounces of blood, may be taken away immediately; a few ounces taken away *now*, may prevent the repetition of the operation very many times, if this period is missed, and the inflammation suffered to go on for the want of it. You will perpetually

hear of danger arising from bleeding, of producing agues, or that it is not right to bleed in cold weather, or some other simple reasons given why the operation should not be performed. Wherever there is a tendency to inflammation, and particularly in the lungs, none that are in their senses will hesitate to take blood away. Suppose you are nervous, gouty, or low, (terms that are very vague and uncertain, and often mislead) a few ounces of blood will do no great harm, but the omission may; the quantity must be proportioned to the necessity, age, and strength of the patient, and to the manner in which he has been used to live; for one would not bleed a delicate person, and one who lives regular, in the same quantity as those who live freely, and are more robust.

The great fault is, that bleeding, like other means, neglected too long before it is performed, loses much of its power; for when mischief has taken place, the disease will have its regular course, and twenty repetitions will not have so salutary effects, or be able to reduce the inflammatory state of the blood, as one timely one would in the beginning. A few ounces of blood in coughs may generally with  
safety

safety be lost; but a repetition requires able advice to direct properly.

After a proper regimen has been observed, the body been opened, and a few ounces of blood taken away, if the cold should not have been attended to in time, or not get any better with the above mentioned treatment, antimonials, given in mild doses, very much contributes to relax the skin, open the pores, and remove fever and inflammation; and indeed it requires all those very often to remove bad colds.

In administering antimonials, we are not prejudiced in favour of any particular preparation, whether antimonial wine, kermes mineral, emetic tartar, or Dr. James's powder; we think indeed that all the virtues of antimony, may be received from emetic tartar, or kermes mineral, the former in doses of a quarter of a grain, to half a grain, given once in three, four, or six hours, in any vehicle; and the latter, from one to three grains in the same distance of time as they may be found to operate; a nausea, or sickness, being produced, and succeeded by sweat, or a few gentle motions, or both, is the operation we



would wish, but not violence, for persons often encrease their colds, from being obliged to get out of bed frequently, when in a profuse perspiration, from the violence of the antimonial; indeed, when there is much bile in the first passages, it serves to encrease that violence. The opening the body with our mild purge, previous to the administering antimony, prevents this taking place.

In twelve hours, fever and cold will often be carried off by a prudent use of antimonials; but bleeding and purging should precede its use. If Dr. James's powder be preferred, from three to five grains, may be given every three, four, or six hours, as was before advised. The patient does not reap benefit from being ruffled by it; and persons full of blood, and those that are weakly, receive much injury from this cause, and we fear that the indiscriminate and officious use that is made of it, does much harm; the more mildly and regularly it operates, the better and safer; that is, by gentle sickness, sweating, urine, or stool, or all together moderately.

One caution we think necessary to be observed by those who give James's powder, according to the directions in the packets, or papers, which are fold. Always to weigh the same with nicety which they mean to give, and never to trust to the quantity which their paper states it to have.

They profess to contain, in each paper, twenty grains and a fraction, but the Author has weighed them often, and found some to contain twenty-nine grains in each single paper, and in others, fourteen grains only; and any candid person may easily judge the mischief that may be done by seven or eight grains, given to weakly persons, when five were only intended; and what delay, and of course injury, must accrue to others, in giving and depending upon the operation of five grains, when three, or three grains and a quarter, had only been taken. It is a medicine of great power, and great virtue, given properly; but in these uncertain doses, and when not properly adapted to each particular case and constitution, is capable of proving mischievous. The public have a right to exactness from the proprietors of the powder, considering how well they are paid for it,

it, and that the health and lives of his Majesty's subjects are at stake.

If the body and skin should be very hot, and feverish, five or six grains of nitre, in barley-water, or the almond emulsion, will lessen the heat and not interfere with the antimonials, when taken between the hours of taking the antimony.

The following mixture is one of the best general medicines to cure fevers in most constitutions as perhaps can be prescribed, and possesses no quality likely to do harm, a circumstance which the author would wish a prescriber to have always in view.

Take of the fresh juice of lemons, three ounces, salt of wormwood, two drachms, emetic tartar, one grain, simple spear-mint-water, five ounces, sugar as much as may be palatable. The whole of this mixture, will make four doses, for an adult person, and may be taken at the distance of four, five, or six hours between each dose; younger persons may take two spoonfuls at the same distances of time, as may be found necessary; but we could advise people not to trust to this, or to any general medicine too long,



long, for fear some symptom, attending particular cases and constitutions, should indicate some other mode of treatment, and which none but the experienced can distinguish or discover.

Dr. Buchan has very strongly recommended a plaster of Burgundy pitch, to be applied to the back for an obstinate cough; we have known it of service, but a blister is often as little troublesome and more speedily beneficial. Where a blister is objected to, use the other, but depend not on externals only of any kind.

Opiates are often given in troublesome coughs; we are of opinion that they ought not to precede bleeding and purging, especially if there be the least fever or inflammation; Dr. Fothergill held this opinion, where the breast and lungs are much agitated by coughing, rest ought to be procured; but as opiates encrease the heat of the body, and lessen its powers, they should be given with caution. A tea spoonful of paretoric elixir, or syrup of white poppies, in any of the emulsions, or mucilaginous drinks, as was before observed, and taken at going to bed, will certainly do no harm, and will tend to quiet the cough and procure sleep.

Farther

Farther with medicine we mean not to go, nor even quite so far, if violent symptoms come on, without calling in good advice, as we have all along intimated; but as so many people have a propensity to *Quackery*, we would wish them to do it with as little mischief as possible, and as near the regular practice as may be, and for this reason, we have held out to them, safe and mild remedies, with cautious rules for administering them, and we doubt not but if they are given properly, that they will have the desired end.

We think it our duty, after having given some directions to remove colds, and prevent them becoming dangerous, to offer a few remarks, whereby colds may be prevented, and constitutions, subject to catch them, rendered less liable to do so, and make the weakly to become strong—and the strong more vigorous.

In a variable climate like ours much will depend upon regularity in living, and the mode of dressing agreeably to the season of the year, and severity of the weather. In England, we are very neglectful in this particular, but we must admit that a great deal depends upon custom begun early in life, and regularly continued.

ed. Very weakly constitutions may be very much improved, and strengthened, by training them gradually to bear the vicissitudes of this changeable atmosphere, and make them become what is called *hardy* ; but we have seen this very often carried too far; the vigour of the body as well as the mind, in some constitutions, may be very largely encreased, whilst in others, if you press it beyond a certain *pitch* you injure both. Parents, who have these objects in view, would do well to consider the natural strength both of body and mind, and to bend the bough very gradually; otherwise, they will often break it in the attempt. So it is in persons that are ill, or recovering from sickness; when the body is in good health, it may be made, by degrees, to bear almost every change without inconvenience, but whilst disease, or its effects, remain upon them, the most trifling innovation in diet, cloathing, &c. is not without hazard of danger.

Nothing, perhaps, contributes more to strengthen the constitution, and render the body less liable to catch cold, than bathing in the Cold Bath, or in the Sea. Yet this should never be used whilst the patient has a cough or cold

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upon



upon him, but if it is begun in relaxed or weakly constitutions, or such as are called nervous, colds and their consequences will be prevented. It may be used twice or thrice a week.

Next to cold bathing, warm cloathing demands our attention, which we recommend to be sufficiently worn, to prevent the keen blasts of the north and north-east winds from blowing off the perspiration from our bodies, and thereby closing the pores of the skin, and producing colds, rheumatifms, fevers, &c.

Moisture is also very injurious to the body, but moisture and cold applied together, are more powerfully bad, than either of them alone. Therefore, what can cold and moisture be resisted so well by, as warm cloathing? that is, warm stockings, and shoes; and such as are accustomed to have winter coughs, asthmas, fore throats, &c. will find a thin flannel waistcoat worn next the skin under the shirt, to be one of the best preventatives known; and we are surprized to find the judicious Buchan object to flannel.

No body of men enjoy better health than coachmen and chairmen, who go through every  
vicissitude

vicissitude of weather, and we attribute it to their going so warmly cloathed as they do, and their health would be still more permanent, if they had not a bad custom of drinking warm purl, and other warm drinks, and immediately after going into the cold air; whereas a glass of any spirits, or a pint of cold strong beer, fortify the body against cold much more, because the warm drinks open the pores, and the cold ones do not.

We are sorry to see so many absurd fashions invented for my fair country-women, fraught with so much danger to their health, and of course to their beauty. If they are to wear great hoops, short stays, and petty-coats up to their knees, they require warm flannel drawers, and warm under coverings to keep them from the influence of cold. It is a matter of some surprize, that delicate as they really are, more mischief does not accrue from such modes of dressing. In a morning, they are wrapped up, with close warm gowns, and the face, neck, and chest, carefully guarded from cold by a warm cap and handkerchief; and in the evening, are seen half naked in the street, the play-house, or in a cold



coach. Or, perhaps, after sitting in a warm room, heated with large fires, a number of candles, and full of people for three hours together, then, all on a sudden they walk through a cold airy gallery, and winding stairs, with currents of wind blowing up; and afterwards be driven a mile or two in a cold coach, through a pinching frost, or damp midnight air.

Our young men are equally careless in conducting themselves in the same things, as well as in their cloathing, one minute they are in a hot crouded play-house, and the next exposed to the cold piercing eddies, and great currents of air that are felt round the Garden, the larger streets, and St. Paul's; and so indiscreet is pride, that you seldom see them in a great coat when they are dressed for the evening, although they have been wearing it almost the whole day before.

Our young citizens are particularly regardless of this circumstance; one part of the day they are in a close warm accompting house, and in the evening with light thin cloaths, with the breast open, and perhaps under a course of mercury.



cury. Mercury is injurious to the body, when, troubled with a cold, and it is dangerous to be exposed to wet and cold during the time it is taken, as it contributes to the catching cold by its debilitating powers.

We could wish the morals of the people were such as not to require its so frequent exhibition; but as we cannot be expected to reform the age, we think it our duty to recommend warm cloathing, whilst they are requiring its specifick virtues, that it may not do more injury than good.

Too warm cloathing relaxes and debilitates the body, and promotes too plentiful perspiration; a medium is therefore to be observed, but a want of that which is proper, is attended with more serious mischief than by too warm a cloathing, if it be not imprudently thrown by *suddenly*.

Children, that are subject to gripes, convulsions, coughs, &c. should always wear warm stockings; these, and many of their complaints, arise, from their tender limbs being chilled, by  
the

the severe cold of our winters, and their legs and feet not being covered at all—A pernicious custom!

To conclude, if every person that finds himself afflicted with a cold, would take the trouble to read this pamphlet with attention, so as to understand its contents well, and not to cursorily catch one part, without attending to the other; and afterwards carefully to apply the means here recommended, we flatter ourselves, without presumption, that the complaint would soon be removed, and the patient, instead of languishing many months of a consumption, in consequence of having neglected this care, would enjoy good health, and vigour in its place. Was this to be attended to in general, it would soon put an end to the disputes of the learned, whether our *births*, or our *burials*, exceed each other; by the great numbers of subjects it would save to the state, and shew foreigners, that consumptions are rarely, if ever contagious in *England*, and by no means so common as they are in Spain, Portugal, and Italy. The great contagion here is, *carelessness of colds in their origin*, and which

we

we hope to see lessened every day, it is *our* most anxious wish, and if we have the pleasure to hear, that, *but one parent saved his darling son, or one son an affectionate and tender parent, thorough our directions, we shall have a rich reward; and it will confirm us in an old favourite motto, that "NO LIFE IS SO PLEASING TO GOD, AS THAT, WHICH IS USEFUL TO MANKIND."*

Successfull





SUCCESSFUL DIRECTIONS,  
TO PREVENT AND CURE  
CONSUMPTIONS.

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—————*For want of timely care,  
Millions have died of medicable wounds*

DR. ARMSTRONG.

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**T**HERE is no disease which robs the world of so many useful members of society as Consumptions; the merchant, the mechanic, and the scholar, alike become victims to its fatal influence; for not only men of the greatest talents, but women, of the fairest forms and liveliest sensibility, who might have become shining ornaments to the nation, as well as to domestic happiness, are untimely snatched away, by this cruel distemper.

Consumptions have always been common in this country, and we very much fear, that they are found rather to increase than diminish, and probably from some of the following causes : Our youth are not so robust and strong as they used to be, owing to the present modes of living, and other habits of life. We have many more persons employed at sedentary trades than used to be, in large towns, and in many businesses, which furnish the surrounding air with unwholesome materials, which are drawn in with the breath, and injure the lungs; many are also engaged in employments which require an almost constant bending of the body forwards; and others to press upon the chest, and so cause additional labour in respiration; and consequently to the circulation of the blood.

Pleasure, and dissipation, are also sought after by all ranks of people; the numerous places of public amusements, are so many seed beds, and nurseries for colds. In summer, as well as winter, the same danger prevails; owing to persons not considering sufficiently the nature of our climate. At Vauxhall, and other nocturnal amusements, what numbers may be seen



seen at midnight, as thinly cloathed, as they were in the middle of a hot day? the hotter the day, the larger the quantity of dew naturally falls, and sometimes the whole atmosphere is loaded with watery vapour, and a brisk east, or north east wind, blowing at the same time; the pores being opened by the heat of the day, more readily become suddenly closed, a check of perspiration takes place, the lungs at the same time imbibe the damp, and cold air, and a foundation is often thus laid for future serious mischief.

*But while the chilling dews descend  
Let nothing tempt you to the cold embrace  
Of humid skies—————*

DR. ARMSTRONG.

Our boys, particularly in the metropolis and other large places, have too early and too frequent a knowledge of the sex, which lessens the growth and strength of their constitutions; nor does the mischief stop here, for a *certain disorder* is too often the consequence of such pursuits; and the means necessary for its cure often debilitates the body, breaks down the

crasis of the blood, weakens the elastic fibres, and renders the body more liable to receive, and less able to resist, the sudden changes, from heat to cold, which they are perpetually exposing themselves to.

There is also a practice, too common in large schools, and sometimes in private life, which has very bad effects on the constitution, which is Onanism. Parents, and guardians, and those who have the charge of youth about the time of puberty, cannot be too watchful to prevent it, or depict it in too hateful colours, in order to keep it from growing into a habit, and therefore become, like all other habits, difficult to remove.

Whether we are right in our conjectures, it is not for us to determine ; be it sufficient that we think, from the observations which we have made, that we are warranted in drawing such conclusions, and offer them as beacons to the unwary. Upon the same principle, we beg leave to make another remark, which we think ourselves equally justified in hinting to our fair readers ; which is to be very cautious, in the use of *cosmetics* to beautify the skin, or take  
off

off pimples from the face, &c. for those which are most used, are prepared from white lead, and other most deleterious poisons; which, not only repel the humours, but communicate their poisonous qualities to the lungs, and other tender parts of the constitution.

To these occasional causes many more might be added; but as it is not our design, to write a regular and compleat treatise on Consumptions, we shall content ourselves, with just stating the general appearances and effects of the disease, and such means as we have observed to be beneficial, or detrimental, to those who have had the disorder,

The generality of Consumptions, as we have before observed, are brought on by the neglecting colds in their early state, or by some other cause, which might have been as timely removed, had it been attended to; in this we include such persons as are said to be born of consumptive parents, or out of whose family some have died of this disease. For although we admit that many diseases be hereditary; and that very distressing cases frequently happen, where



where this proves fatal to several, in one, and the same family; yet we cannot forbear thinking, but that many of them might have been prevented, by attending to the rules stated in this, and the former part of our work.

In the beginning of these sheets, I have expressed myself, as strong as I was able, of the numerous evils which arise for the want of care; and although, I have my hopes, yet I have my fears, lest it should happen in this case, as it happens in general, that advice, gives no new powers of resistance. Yet I cannot again forbear warning such persons as have coughs or other disorders in the lungs, to avoid if possible the fate of as amiable a young lady in my neighbourhood as ever the sun shone on; the beauty of whose person could only be equalled by the goodness of her heart, and other endearments of mind! a case which will not now admit of relief, although it most probably would have done, had she taken the proper care in time, or had the disease been thought serious, when it was remediable. It worked, like a worm in the bud, to the unspeakable

distress

distress of one of the best of parents, and other lamenting friends.

It is perhaps worthy of remark, that most of our youth, of both sexes, who shew very extraordinary marks of genius early, be generally of very weak delicate constitutions; their natural eagerness to improve, and to excel, is equally pleasing to themselves, their parents, and their friends. In this case, the very numerous, and arduous studies, and other necessary qualifications for the completion of the character of a bright genius, become too mighty for them to undergo with safety to their health. Nature, at this time of life, has many important offices to perform, which are impeded, by too great exertions of any kind; the solids become weakened, instead of accumulating strength; the smaller vessels are unfit for their several functions, for the want of that principle which nature employs in giving firmness, power, and exertion to the constitution, when it is weak from any cause, and particularly in such persons as outgrow their strength. The whole frame insensibly becomes diseased, and is sometimes in the greatest danger, before the

the patient, or the friends suspect that medical assistance be necessary; and happy it is, when that assistance is able to discover the real cause, or do any permanent good. Therefore, ye parents! who have children of this description, consider that shining abilities will make their own way, and will not be obscured by time, that the fruit will be ripe in due season, that bodily strength is necessary to great exertions of the mind, and that many of the choicest plants, and most beautiful flowers, require the minutest, as well as the most diligent care to bring them to mature strength and beauty, and when arrived to that certain pitch, will bear many a nipping frost, and piercing cold, with impunity, which but a little before, would have deprived them of existence. The above cases often end in consumption, therefore great judgment is necessary to distinguish the true cause and apply proper means, and whoever is thus circumstanced, we cannot but urge them to guard against so distressing a situation in time.

The most frequent causes which occasion consumptions, are the small pox, measles, and several



veral other species of eruptions repelled upon the lungs; customary evacuations having been stopped suddenly; such as issues, sweaty feet, the menses; &c. colds neglected; ill cured inflammation, spasmodic asthmas, scrofulous affections, tubercles, a spitting of blood from the lungs, a malformation of the bones of the chest tight stays, and other causes which impede the free action of respiration. Absorption of matter from an abscess, women giving suck beyond their strength, or when emaciated by other profuse natural drains, the materials of several manufactures being drawn into the lungs in the act of respiration, such as barbers, mealmen, glass grinders, stone cutters, &c. &c. all tend to the same destructive end.

If the Consumption arises from violent colds, the symptoms may be gradually traced from the beginning; but, if from any of the above mentioned causes, it requires discernment to discover what that be, that it may have its correspondent cure, as may be seen, by the following case: A lady, without any previous known cause, or apparent neglect, seemed to be growing consumptive, very able physicians had been frequently consulted, and every rational means

were used for her cure, but without effect. One day I asked her, if she had any objection to an issue? she answered no, that she had had one all her life, till within a few months, when she was desired to dry it up, but now she began to recollect, she had never been well since. An issue was instantly made, and she very soon after got well, and still continues so; this is four years ago.

Persons, who are most subject to become consumptive, are of a delicate make, fair complexion and florid countenance, soft skin, long necks, narrow chests, prominent shoulders and hips sticking out like wings, with hollow temples, thick upper lips, and teeth of a milky whiteness. Many of the above description have constitutionally weak lungs, and the glands of the neck, lungs and bowels, are often obstructed, but these do not always produce mischief, till colds or some other cause, sets them in a flame, which ends in suppuration, hectic fever, ulcers, and consumption.

Sometimes, where tubercles be the immediate cause, and have been made tender, from too great exercise, breathing bad air in hot crowded

ed rooms, improper food, colds, &c. the beginnings are hardly perceivable, the cough not being very frequent at first, generally dry, or unaccompanied with much expectoration, and that, mostly, of a light frothy mucus, mixed with air, and mostly in a morning, and excite vomiting; the patient feels an uneasiness about the chest, or a sense of pain on lying down, on one, or both sides, or under the breast bone; the breathing is also oppressed with the least quickened motion, and particularly so in hot rooms, or in moist weather; his spirits are very irregular, being sometimes very lively or sad, without any known reason; a red flush will appear upon one, or both cheeks, especially after meals, with a dryness and heat in the palms of the hands; a particular quickness in speaking may be observed, as well as an unnatural peevishness, which gains upon them, though before of the sweetest dispositions; all or most of these symptoms, may be seen by a careful observer many months before the patient thinks of complaining, or will acknowledge that he is ill, and then the cough perhaps may be found to grow more troublesome, and all he ails is attributed to it, and to appease which the family apothecary is sent for, and is desired to administer some soft balsamic, but if he talks of bleeding or regimen, which now is absolutely necessary,



cessary, he is supposed to have some private views of his own to answer, or the patient replies that he is not bad enough to submit to that yet; when God knows, this is the very time that he can be of real service. By a little care, and attention, the urgency of the cough becomes abated, the soreness of the chest is also lessened, and being tired of medicines, and constraint or confinement, the patient thinks the rest will wear off; thus half cured he immediately flies to the same round of dissipation, or exposure to colds, or other means which first brought it on, which does not fail to add to the already dangerous heap, which daily accumulates till it ends in the disease in question.

After having given a full description of this disease, I hope my readers will excuse my frequent repetition of advice relative to taking care in time; it is from a conviction that it cannot be too often repeated or enforced, and not from a tautological use of the term, which it might otherwise appear to be; for I would rather that a critic should say I had used such a sentence too often, than that one person should receive any injury for the want of attending to it. Or if  
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this be a blemish to the work, I hope it will be observed by every reader.———

I shall not say much with respect to medicine here, for the reasons before given; the principle things which I shall advise, will be more to regulate the conduct of patients, by applying to their reason, matters within their comprehension, and such minutiae as physicians have not always time to direct, but which in my opinion are essentially necessary.

In the beginning of Consumptions, bleeding is a principle remedy, and in almost all constitutions, absolutely necessary, which must be repeated often, in small quantities, according to the urgency of the disease, and the strength of the patient.

If pain in the side, or under the breast bone, striking strait to the back bone, or oppression in breathing, or the cough be remarkably troublesome, or the expectoration streaked with blood, no medicine can be so useful as bleeding; three or four ounces, may be safely taken from very weakly persons in the above cases,  
for

for these plainly indicate inflammation, which will do more mischief, than the temporary inconvenience, which may be supposed to arise from the weakness which bleeding may produce—those who are not so weak, may have it repeated, once in three, four, or ten days, if the pains, or other pressing evils remain. By this the root of the disease is struck at, and its progress stopped.

At the same time that bleeding is necessary, the body must be kept open, with cooling neutral salts, such as sal polychrest, cream of tartar, soluble tartar, &c. or the following powder taken three, or four times a day, in thin barley water, or any other simple vehicle, will answer that purpose, and contribute to abate feverish heat, and inflammation,

Take of sal polychrest, sugar, and compound powder of gum tragacanth, of each a scruple, mix for one dose. This may be increased or diminished, in proportion to the effects; or a tea cup full of the following pleasant apozem, may be taken three, or four times a day, for the above purposes.

Take



Take of cream of tartar, and purified nitre, of each two drams, pearl barley half an ounce, honey two ounces.—Boil these gradually in three pints of water, till half is consumed, then strain off the clear for use ; liquorice root may be added or not at pleasure.

If the body be too much opened by the above recited medicines, the following draught may be used, to abate the fever, or inflammation, and should be taken two or three times a day, or oftener if needful.

Take of sugar and prepared chalk, powder of gum arabic of each half a dram, nitre purified fifteen grains, pure water, or simple mint water, two ounces.

If the nitre should be found to occasion gripes, or prove too cold for the stomach, it may be lessened to four or five grains, the saline mixture with or without the emetic tartar, may be taken for the like case, as in some constitutions it agrees best ; a dram of prepared chalk may  
be

be added to the mixture, and the emetic tartar omitted, where too many motions abound.

The inhaler should be used frequently with the same cautions as directed in the first part; this will lubricate the inflamed lungs, lessen the cough, and cause the mucus to be spit away with more ease and safety.

Blisters are most safe efficacious things in all complaints of the chest; it is not perhaps so much from the quantity of discharge which they draw away, as from a particular effect they have of inviting the inflammation from within outwardly, as is found in cases of sore throats, &c. we therefore advise small ones to be applied from time to time, to different parts of the chest, where the pain is, or upon the back, pit of the stomach, or sides; when one has been on the part affected a day or two let it be healed, and in a day or two after apply another to some other part, if wanted; this is less painful and more efficacious, than what is called a perpetual blister, for with that there are fresh flies applied and more trouble in general.

Issues

Issues between the shoulders, or between the ribs, in many desperate cases, I have known of singular advantage; Mr. Mudge, and others, lay great stress upon them; I have myself a good opinion of their use, and therefore recommend them.

As many very potent medicines might be prescribed, and perhaps applied improperly, we shall forbear mentioning any more, except for violent coughs, lest we should do ourselves, what we condemn in others ; we shall therefore mention a few simple medicines, which will do no injury, and yet contain considerable virtue, in allaying fever in the lungs, and at the same time be lightly nutritious.

For this purpose we recommend decoctions, or infusions of liquorice root, figs and raisins, marsh mallow, dandelion, colts foot, comfrey, eryngo and mullein roots, either of these, sliced, and boiled in water until pretty much impregnated with the virtues of the plant, an ounce or two to a quart of water, and boiled to a pint, will be of sufficient strength; such as are very glutinous, as comfrey, less of the root will be sufficient; these,

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sweetened



sweetned with honey, are most excellent healing pectorals. If the fever is much abated, or if the patient be weak, or in such a state as bark might be thought adviseable, the bitter pectoral herbs, will generally be found more beneficial, as they do not bind the chest. For this purpose, I recommend infusions of hoarhound, ground ivy, lungwort, maiden hair, elecampane, wild succory, oak lungs, &c. the juice of lemons, or oranges, or any other vegetable acid, may be put in great plenty, in any of the drinks, if they agree; they cool, and abate fever, strengthen the stomach, and check night sweats, and in general are to be preferred to mineral acids.

Honey, for almost all disorders of the breast and lungs, is a most admirable remedy; Doctors Huxham, Arburthnot, and many other great men, have very justly extolled it; and as it does not agree with all constitutions, we apprehend, that clarifying it, would make it do so; indeed, some care is necessary to procure it genuine, as it is a very common base practice for dealers in it, to adulterate it, and in this case, no one knows what they eat; it may be used, in common drinks, in medicine, and on bread instead of butter.

As

As the cough is a very troublesome symptom, during the progress of consumptive disorders, it may not be amiss to give a few directions, in addition to those we have already, to keep the violence of it from doing more mischief, while the cause is being removed, by the means just recited; and such others, as we shall have occasion to mention; the pectoral infusions, and decoctions, above advised, will generally answer the end very well, but as there are many cases, which they will not, we shall give a prescription for a mixture, which will act as a good expectorant, appease the cough, and procure rest, and if any thing more anodyne is wanted one, or two of the expectorating pills may be applied for that purpose.

Take of mucilage of quince seeds six ounces, oxymel of squills half an ounce, ipecacuanha wine one dram, liquid laudanum ten drops. Mix. Of which a desert spoonful may be taken now and then to help the cough and to sheath the passage to the stomach; it should be swallowed gradually, and will thereby be more efficacious. This may be called the Healing Expectorating Mixture. And the following, Anodyne Expectorating Pills:

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Take

Take of laudanum, conserve of roses of each five grains, dried squills in powder, ipecacuanha in powder, of each four grains. With any syrup, make these up with care into ten pills, one or two of these may be taken at night going to bed, when necessary. One caution is very necessary; wherever opiates be given, to take care that they do not make the patient costive, which they generally do, the squills and ipecacuanha may probably prevent it, but if they do not, use some of the opening medicines already advised.

When the lungs are loaded with tough phlegm, and unattended with pains in the side, or under the chest, or other symptoms of inflammation, from five grains to ten of ipecacuanha, may be given once or twice a week, in a dish of tea, in the morning in bed, and the patient to lye down after it; in half an hour, more or less, it will cause a gentle effort to reach, and another dish or two of tea may be drank, and it will come off easy; I do not mean this as a regular puke, but only as a means to loosen the tough phlegm in the lungs, and by the little exertion of puking, to bring it away  
more



more expeditiously, and indeed more safe and pleasant, than by much coughing.

The most difficult task, we are now going to impose, which is a rigid adherence to a particular regimen, without which the choicest medicines loose their proper effects, and the best advice is thrown away; the disease cannot be cured by medicine without the diet corresponds, and of the two, I would say, rather neglect your medicine than your food, for one improper meal may do more mischief than any physic can be able to remove in a week.

In almost every case of consumption of the lungs, where recovery is much to be expected, (some few exceptions to the contrary being allowed) flesh meats, and every preparation of them, must be forbidden. Fish, as partaking in some degree of the same nature, is also improper. Calves feet jellies, nourishing soups, and such things as are generally considered by good housewives, and people in general, as necessary to recruit the strength of the sick, are much too rich and stimulating, and too heavy to digest properly. In their place, a diet consisting of fruits, vegetables,

vegetables, milk, and farinaceous substances, must be substituted. These will be quite sufficient to support the powers of life, while the nature of the food will furnish a mild soft nutriment to the body, free from irritating qualities, to aggravate the disease, the simplicity of which in time changes the whole mass of blood and juices, from a hot inflammatory state, to that of a pure healing kind, and render the solids less susceptible of feverish heat.

For when the lungs, or the membranes leading to, or surrounding them, are become inflamed from colds, or any other cause, the blood which is prepared from eating any of the above-mentioned things, is of a very stimulating nature, and produces that kind of effect, as urine does, when applied to the eyes, or salt water to a wound; this irritation causes spasm, and, by its effects, hurries the blood through the lungs faster than it ought to do, to be properly strained, and purified, and mixed with air, (which is the natural office of the lungs to perform) this also quickens the pulse as quick again as it does in health, and creates a disturbance to  
the

the whole frame; the fever is thus kept up, and the constitution is worn out, by the constant action, and re-action of nature, in attempting to remove it.

There is so much observance necessary in this matter, that even very mild food may produce bad chyle, and therefore an irritating principle to the blood, animal fibres, nerves, or whatever else conveys the active principle of life or disease; I will not dispute with casuists, which of them does it; be it sufficient, that in my opinion, a very hearty meal taken of rice, or any other food equally innocent, may, by distending the stomach, lessen the free action of the heart and lungs; by overloading the powers of digestion, and by filling the intestines with more chyle than can be properly prepared, may produce all the mischief we want to avoid.

Therefore, for the above reasons, we recommend, that consumptive persons should take only a little food at a time, but repeat it the oftener; they should not be so careful to attend to regular meals, but study more what will remove the cause of the disease, than please the palate.



palate. An ingenious person, may make, or prepare, an almost endless variety of dishes, from the vast tribe of fruits, vegetables, &c. to satisfy the desires of a reasonable being, without meat; potatoes may be boiled, baked, roasted, and prepared in a variety of ways—rice, sago, millet, salep, tapioka, pearl barley, &c. will make a numerous tribe of pleasing repasts; salads, and ripe fruits; marmalades, and preserves; jellies, and preparations of them; with good light well baked bread, will furnish most delicious banquets in their turn. But of all the most generally useful and acceptable foods, milk claims the preference, and will admit of abundance of means to make it palatable and useful. Rennet whey, in consumptive cases, as well as in many others, is beyond all praise, in my opinion; the living entirely upon rennet whey and a little white bread, and baked apples, for about six weeks, restored to health the author of this, from a state the most dangerous; and he truly may say he was starved into life. A quart or three pints or more, should be drank daily.

Permit me here to remark, that much mischief is done by a common custom, of weakly persons

persons going to drink the milk from the cow, (as it is termed) it is in general too rich for the stomach, and is apt to curdle, and especially when rum is mixed with it, a very common, but a very pernicious custom. Doctor Fothergill took great pains to abolish this very dangerous practice—In general milk is best for consumptive persons, and other valetudinarians, after it has been skimmed, or the grosser parts separated by cream of tartar, oranges, lemons, sorrel, raisins, or some other grateful acid. Buttermilk, asses, goats, or mares milk, may be taken in their natural state, being much lighter than that of cows. Some physicians have had opinions, that milk would be more salutary, were the cattle to be fed on particular herbs, but in mine, this purpose will be better answered, by making a strong infusion of the herbs you want, and mixing milk with it, as you will then certainly know the exact proportion of the herbs which you receive, otherwise not. Turnips baked in equal parts of milk and water, and the juice afterwards strained, and sweetened with sugar-candy, and drunk often, is very useful for coughs, as well as nourishment.

The following is a most excellent food, which may be made and taken at pleasure; it may receive a variety of flavours from rose water, orgeat, orange flower water, &c.

Take of rice, pearl barley, sago, and of candied eryngo root, of each one ounce, boil these in three quarts of water, till half is consumed, and towards the end put in a quart of milk, then let the whole boil a little and strain it for use; or those who choose, may eat it all as it is; those who are very weakly had better strain it; it will be as light as asses milk, and more nourishing, and not so liable to cause a purging. A quarter of a pint should be taken three or four times a day a little warm.

Lettuces, favoys, cauliflowers, artichokes, pease, beans, turnips, scorzenera, fassafy, and asparagus, &c. &c. may be freely indulged in, cooked in a variety of ways. It is very observable, that the history of medicine furnishes us with a number of cases of persons, having recovered, after both physicians and friends, had given them up to die; these persons have been restored by living entirely upon cucumbers, grapes



grapes, melons, water-creffes, milk and bread, or some one of them. There may be a few cases of consumption; or of consumption of a particular kind, where more generous nourishment must be allowed, but these are rare; but so long as appetite is more consulted than health, and so long as medical men continue to indulge it, rather than displease their patients, consumptions will be common, and will prove fatal! an indulgent physician, in these cases, is like a mild judge to a desperate criminal, who injures society by mistaken lenity.

The drinks should be rennet whey, the common emulsion, Bristol water, Seltzer water, or any light pure cooling drinks; they may be acidulated with oranges, lemons, apples, currants, tamarinds, or other fruits, or sweetened with honey, capillaire, orgeat, &c. but wines, beer, ales, and all spirituous, or fermented liquors, should be considered as improper; they promote fever, and inflammation, excite coughing, and encrease the disease. Coffee, or tea, cocoa, &c. may be drunk, provided they be not taken too hot, or in too large a quantity at a time, and with one third of skimmed milk mixed with them, and

not found to affect the nerves. If so their use is improper—Butter, cheese, and cream, are too rich, irritating and gross to be allowed with propriety.

Next to proper food, drinks, and medicines, pure air is of the greatest importance to the recovery of consumptive persons; and we are well assured that it is not sufficiently attended to by the faculty, or we should not see so many persons in the last stage of the disorder, before they are sent out of London, and other large towns.

The air of large cities is certainly bad for diseased lungs, and I fear that the air of Islington, Brompton, Chelsea, Kensington, &c. is not sufficiently ventilated or free from the effluvia of London smoke, to make them so advantageous as more lofty situations, or those a few miles farther from town\*. The situation must be suited to the nature of the disease and to the time of year, or severity of the season; it would be absurd to send

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\* Nor can any place be wholesome for diseased lungs where stagnant waters, or the contaminated air arising from putrid vegetables abounds, which is the case near many large nurseries, and in many places in the vicinity of the river.

a very weakly person in the middle of winter; on the summit of Hampstead or Highgate Hills, or to bleak Black Heath, but warm mild situations may be found even in winter, near to the above places, which are sheltered from the colder winds, yet enjoying the benefit of pure air.

In that elegant poem on the art of preserving health, the following compliment was paid very deservedly to Hampstead:

But if the busy town,  
Attract thee still to toil for power or gold,  
Sweetly thou mayst thy vacant hours possess  
In Hampstead, courted by the western wind.

Much might be said on the variety of situations which would be injurious or salutary to consumptive persons, but would take more time than we can here admit; such a work, executed with ability and candour, in our opinion, would be a valuable acquisition to the public.

The next thing which I have to recommend, is a proper regulation of exercise. There is nothing more injurious to consumptive persons than riding on horse-back at improper times, or in an improper degree, for altho' it stands recommended by the highest authorities, both ancient and modern,



modern, yet it has not been sufficiently limited to prove of benefit, without very frequently being injurious. If there be fever, spitting of blood, violent coughs, attended with pains in the chest or side, or a very quick pulse, much exercise of any kind is improper; but where these do not prevail, gentle riding, and encreased by degrees, as the constitution can bear, by giving a general and equal exercise to the whole frame, makes it salutary and agreeable, if taken properly; for the times of riding, require attention to direct judiciously the season of the year, temperature of the climate, and the situation, must be all well considered.

To ride very early in the morning, before the sun has warmed the air, and dispersed the dew, or fog, is very injurious, and likely to encrease the cough; or if the patient be recovering, may bring on a return of the complaint. It is equally improper to ride in the middle of a hot day, or be exposed to the fervid heat of the sun, as also too late in the evening, when the dews are falling, for the lungs are susceptible of the least impropriety in these respects, and those who know the hazard, will do well  
not

not to venture. The riding in a coach or chariot, sailing in a boat, or any other easy exercise in the open air, is preferable to walking, or any other that occasions much fatigue.

The minds of consumptive persons should be kept as tranquil as possible; great anxiety after business, pleasure, or study, or any other thing, which has a tendency to ruffle the nerves or disorder the frame; but such light things as will amuse the mind, and pass the time away cheerfully, will contribute to the cure. Nor need I say that anger, or any violent passion, proves extremely injurious to consumptive persons. Dancing, shouting, reading, or talking loud, singing, or blowing wind instruments, or any means which call for much exertion of the lungs, is improper. The patient should keep the body in as easy an upright posture as possible, therefore should be careful to avoid leaning on the chest, and to let the blood have a free equal circulation by refraining from tight garters, tight stays, &c. and, it is no inconsiderable moment for the patient to lie moderately cool in bed, and on a matrafs particularly where night-sweats prevail; nor need I say, to go to bed soon in the evening, and rise early in the morning.



morning. It would be much happier if patients could be brought to consider how much a speedy and permanent recovery depends upon the observance of such trifling circumstances, and how little a matter deranges the frame of a valetudinarian! which, by being neglected time after time, it becomes very difficult to establish a fund of good health again; nor can I better conclude than by the following lines from that excellent poem of Dr. John Armstrong, on the art of preserving health.

——— While the vital fire  
Burns feebly, heap not the green fuel on;  
But prudently foment the wand'ring spark  
With what the soonest feels its kindred touch;  
Be frugal even of that, a little give  
At first; that kindled, add a little more;  
'Till, by deliberate nourishing, the flame  
Reviv'd, with all its wonted vigour glows.

## E R R A T A.

Page	Line		
30,	5,	for <i>ostruacted</i> ,	read <i>obstructed</i> .
	21,	dele <i>the</i>	
36,		dele <i>the last line.</i>	
Ibid.		for <i>the catch word Take,</i>	—— <i>Where.</i>
37,	5,	—— <i>laudenum,</i>	—— <i>laudanium.</i>
49,	14,	—— <i>plegm,</i>	—— <i>pblegm.</i>
55,	12,	—— <i>my</i>	—— <i>our.</i>



*J. Kealy*  
OBSERVATIONS

ON THE

TYPHUS,

OR,

LOW CONTAGIOUS FEVER,

AND

ON THE MEANS OF PREVENTING THE  
PRODUCTION AND COMMUNICATION  
OF THIS DISEASE.

BY

D. CAMPBELL, M. D.

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# P R E F A C E.

*A*T a period, like the present, when the press teems with medical publications, of which so large a portion are on the subject of fevers; it seems in some measure incumbent on the author of the following treatise, to assign his reasons, for soliciting the attention of the public, on a topic which has been so often discussed; and for thus adding another ephemera, to the productions of the season.

*A* few years ago, a Dispensary, for furnishing the poor of the town of Lancaster, with medical assistance, having been established, by the humanity and liberality, of several respectable and well-disposed individuals; the author of these observations was appointed to superintend it, in quality of physician to the charity. During the last three years, a contagious fever has prevailed, more or less, amongst those persons, who were the objects of this institution; and also at some neighbouring cotton works: in consequence of which, a great variety of cases in this complaint fell under his notice. In the

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course



course of this practice he has so frequently seen the exhibition of Opium, attended with good effects, that he conceived it to be a duty, he in some measure owed to society, to point out the particular state of the disease, and the dose, in which he has found this medicine useful.

Such was the object of the publication : but as this naturally led to an history of the disease, so that of course would refer to the causes, which are disposed to give rise to it ; and to matters inseparably connected with them In order, therefore, to render it more complete, he has added such other particulars, as he judged would elucidate the methods of prevention, or cure of a complaint, which equally attracts the attention of the magistrate, the manufacturer, and the faculty.

He is sensible that many inaccuracies will occur, in what has been hastily thrown together ; for which he solicits the clemency of his readers. The nonum prematur in annum, is not applicable to a production, whose design is the early communication, of what has been lately observed

## C H A P. I.

*Of the Circumstances which give rise to the  
TYPHUS; or low contagious Fever.*

**T**HAT a particular species of fever, is apt to be produced, in consequence of persons residing in apartments, where there is not a sufficiently free circulation of air; especially if crowded together, and accompanied with neglect of cleanliness, and a deficiency of proper food; repeated experience has so frequently, and so fatally demonstrated, that it would be superfluous to take up time, in adducing instances, where it has so occurred.

The disease, thus generated, has received various appellations. It has sometimes been called the *gaol*, and sometimes the *hospital* fever, from its having originated, or raged with unusual violence in these places. At other times, from a tendency to putrefaction, which has been observed to accompany it, in some situations, it has been denominated a *putrid* fever; and from spots, which in certain degrees of malignity, are  
apt

apt to make their appearance, it has been called by the name of *petechial* (or *spotted*) fever. However, as this fever is not peculiar, either to hospitals or gaols, but may be produced in any places, subject to the inconveniences recited above: and as neither *petechiæ* or putrefaction, are essential to the existence of the disease, the addition of such epithets have a tendency to furnish improper ideas, as well as create confusion, by an unnecessary multiplication of names, for the same disorder. All diseases, are disposed to be more violent in some cases than in others, which will necessarily produce a variation in the symptoms, although the causes which gave rise to them, and the general methods of treatment, are the same. Were every diversity of appearance, to constitute a separate disease, the varieties would be as endless, as the distinctions unprofitable.

Dr. *Cullen* has, therefore, included under the general character of *Typhus*, the various species of fevers, which are commonly termed putrid and contagious: because the Doctor observes, “ That many of the different cases  
“ of *Typhus*, seem to be merely varieties,  
“ arising



“ arising from the different degree of power  
 “ in the cause ; from different circumstan-  
 “ ces of the climate, or season in which they  
 “ happen ; or from different circumstances  
 “ of the person affected.” § We shall there-  
 fore, in speaking of this fever, either employ  
 the technical term *Typhus* ; or call it a *low*  
*contagious fever* : a sinking of the *vis vitæ*,  
 and *infection*, being two circumstances, in-  
 separably connected with it. •

Those who labour under this disease, emit  
 a certain subtile *effluvium*, which, applied to  
 the bodies of persons in health, is capable of  
 producing similar symptoms in them : but  
 varying probably in some respects, for the  
 reasons assigned above.

\* This *Effluvium*, is likewise disposed to  
 adhere, to the cloathing and furniture of the  
 sick person ; to wool, cotton, silk, furs, fea-  
 thers

§ First Lines of the practice of Physic § LXXXII.

\* “ Air which has been breathed, is made poisonous  
 “ to a more intense degree by the effluvia from the sick ;  
 “ and what else in prisons is offensive. My reader will  
 “ judge of its malignity, when I assure him, that my  
 “ cloaths were in my first journeys so offensive, that in  
 a post

thers, and all articles of the like nature, either in their raw or manufactured state, to the walls and floors of buildings ; to the sides and decks of ships : and is also capable of producing a similar disease in persons in health, upon being brought very near to, or in contact with them. The infection is often conveyed by this means, with greater certainty, and accompanied with more violent symptoms, than from the noxious efflu- vium, which arises immediately from the body of the sick person.

The contagion, thus accumulated in foul cloathing, or adhering to furniture, or other articles, of the nature of those, before enumerated, has been called by physicians a *Fomes*.†

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“ a post-chaise, I could not bear the windows drawn  
 “ up : and was therefore often obliged to travel on  
 “ horseback. The leaves of my memorandum book  
 “ were often so tainted, that I could not use it till after  
 “ spreading it an hour or two before the fire : and even  
 “ my antidote a vial of vinegar, has, after using it in a  
 “ few prisons, become intolerably disagreeable ”

*Howard on the State of Prisons. P. 13.*

† *Cullen's first Lines. § LXXXVI. and Lind on Fevers. P. 38 and 40.*

It is not always necessary, that they who generate this noxious effluvia, or to whose cloaths it may adhere, should either labour under the disease in question, or have been previously affected by it, in order to possess a power of communicating it to others ; as it may happen that persons, whose garments are loaded with this contaminating vapour, may not themselves perceive any inconvenience ; although capable of infecting others with a dangerous sickness. This was the case with the felons, who, in the year 1577, at the assizes at *Oxford* ; and in the year 1750, at the *Old Bailey* ; communicated the disorder in question, in so remarkable a manner. In both instances, the felons being themselves healthy, no suspicion of any danger was excited, until the fatal effects of the effluvia from their persons, were perceived in the sickening of so many of those, who attended these courts of justice. “ For these persons  
 “ had been long accustomed to filth and  
 “ uncleanness, in consequence of which,  
 “ the putrid effluvia, would be generated  
 “ gradually, and, for a long time, be con-  
 “ stantly applied to their bodies in small  
 B quantities



“ quantities, till, at length, it became, as  
 “ it were, their natural atmosphere, when  
 “ they would no more feel its influence,  
 “ than a *Tanner* perceives the smell of his  
 “ Tan-yard, or the *Chandler* the smell of  
 “ his putrid tallow.”\*

It is the same with persons, who have been long accustomed to live in unhealthy situations, in hot climates ; these having been in the language of the country *seasoned*, perceive little inconvenience : whilst a stranger on his first coming to reside there, is almost certain to be affected with a dangerous sickness.

Although the low contagious fever, which is attended with the most malignant symptoms, and strongest marks of infection; and has therefore been the most noticed in its progress, is generally, “ The produce of filth,  
 “ rags, poverty, and a polluted air, which  
 “ always subsists in a greater or less degree  
 “ in crowded prisons, and in all nasty, low,  
 “ damp, unventilated habitations, loaded  
 “ with putrid animal steams.”† There is  
 no

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\* *Heysham* on the Jail Fever.

† *Lind* on the health of Seamen. P. 2.

no certainty that a similar fever may not be produced by persons, whose manners of living, are in perfect opposition to those, which have been enumerated : or even from the effluvia of persons, labouring under other disorders.

Sir *John Pringle*, mentions his having known “ instances of this disorder beginning in a ward, where there was no other cause, but one of the men having a mortified limb.”†

Dr. *Lind*, adduces some cases where persons were seized with fevers, of this kind, in consequence of being exposed to the disagreeable effluvia, arising from the bodies of people, who were in the Flux, Small Pox, and even in a maniacal state.§

We also know, that what is commonly called a *low nervous fever*, may be produced in certain habits, where the situation of the person, gives no room to suspect, the influence of contagion, in the formation of the disorder ; and whose modes of living, may have been perfectly opposite to those

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that

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† Observations on the diseases of the Army.

§ On Fevers, P. 60.



that have been recited, as apt to give rise to infectious fevers. As we hold this to be a species of the same disease, differing, only in degree, from the more malignant cases, into which it sometimes degenerates, it is impossible to say in what circumstances, a fever accompanied with sinking of the *vis vitæ*, may not occur; or at what precise point contagion does not exist, or is incapable of exerting itself.

Dr. *Howard*, in his *State of Prisons*, has observed that the *gaol fever*, so common in this kingdom, is not to be found in the prisons abroad; although he has seen some of them as dirty and offensive, as in *England*. - Several physicians of eminence, also bear testimony, that this disease is not known in *Russia*, *Germany*, *Switzerland* and other foreign countries; probably, they may not be inclined to add this appellation, to any contagious fever, unless it be accompanied with circumstances of extreme malignity.

In the hospitals and gaols on the continent, a disease is however found to exist, especially in the former, called by the French *Le Scorbout*, which is contagious; and has sometimes



sometimes prevailed in so great a degree, that that no fewer than 800 persons were affected by it, at one time, in the hospital of *St. Louis*, in *Paris*\*. It was supposed to have originated from want of cleanliness. As the same circumstances, which produce the *Typhus*, are also disposed to give rise to this complaint, it is probable, that what is called *Le Scorbut*, and to which the foreign prisons are subject; is no other than the disease of which we are now speaking, under a different modification, or in a different degree of force, from the climate, diet of the patients, or some other cause; and therefore called by another name.†

All the accounts from *Hungary*, too, inform us, that a contagious fever has appeared in the gaols of that kingdom, (at present filled with prisoners, in consequence of the late insurrection;) which has not only proved fatal to many of those, who are the objects of confinement; but also to  
others

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\* *Howard*, on Prisons, P. 83.

† *Ibid*, P. 101.

others, whose offices led them to be conversant with the prisoners. As the same causes, are invariably disposed to produce the same effects, there seems to be little doubt, but this, will also be found, upon subsequent investigation, to be an instance of the disease, which is the subject of this treatise, appearing in the gaols on the continent, as well as in this kingdom.

C H A P.

## C H A P. II.

*Of the means of preventing the production, and communication of the Disease: and the steps, necessary to be taken, for eradicating it from such articles, as may contain the Infection.*

HAVING enumerated the circumstances, under which a low contagious fever, most frequently makes its appearance, it will perhaps, be proper to speak immediately, (1) of the means of preventing the formation of the disease, in the first instance: (2) of preventing the communication of the infection to those, who may be exposed to its influence: and (3) to point out what steps are necessary to be taken, to eradicate it from any articles, which may have been infected.

From what has been said, respecting the most common origin of this disease, the means of avoiding those circumstances, which give rise to it, will be sufficiently obvious, and in certain situations easily practised. Thus, as confined air, and want  
of



of cleanliness, especially when joined to that low kind of diet, which is commonly termed, poor living, are apt to produce the complaint ; it is plain, that promoting a free circulation of air in the apartments where people sleep or reside ; the practice of cleanliness in all its varieties, with respect to persons, cloathing, and habitations ; the use of a diet sufficient in quantity, and nutritious in quality, with a competent portion of fermented, vinous, or spirituous liquors, (in opposition to low, watery, or crude aliment ; ) especially if combined with moderate exercise, and good spirits ; will contribute much to an exemption from this, as well as many other disorders.† It will likewise be clear, that

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† Dr. *Howard*, with great reason, attributes the frequency of this disease in our gaols, to the sudden alteration of *diet*, and *dejection* of the *spirits*, of those, who are newly confined there. Whoever considers the usual habits of such persons, whilst they are at liberty, when every species of free living, especially with respect to liquors, is generally indulged ; will immediately see, that the withdrawing so much stimulating aliment, and substituting a low diet, in its place, must induce a temporary debility, with respect to the body, as well as a corresponding dejection of spirits : two conditions, equally favorable

that, whilst the modes of life, generally adopted by persons in better circumstances, are so conformable to these requisites, this disorder can very rarely originate with them : and on the contrary, our gaols, till of late, and the dwellings of the lower class of people, especially in large towns, affording all the conditions, favourable for its production and diffusion, we can easily account for its frequent appearance in these places.

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favorable to the production of the disease ; and to the operation of contagion, if it already exists in the place of confinement. But the lower class of foreigners, not being so apt to indulge themselves in these respects, as our own countrymen, the change experienced by them, upon confinement, in regard to diet, will not be so considerable ; the consequent debility of body and dejection of spirits will be less ; and of course, the disorders arising from these causes, amongst which is a low contagious fever, will not be so apt to be produced in their prisons, as in ours.

How far these considerations, may make it proper to grant an allowance of a moderate quantity of ale or spirits, to prisoners, when any sickness of this kind seems disposed to appear amongst them ; as well as an augmentation of other food ; must be left to the superiour judgment of magistrates, who will be equally cautious, of making gaols the seats of festivity and indulgence, on the one hand ; as of premature punishment and death, on the other.



Where the form of a building admits of the opening of doors or windows, and of burning fuel in open chimneys, a sufficiently free circulation of air, will be easily obtained: but where, from the nature, of the structure, as in the case of cells of prisons, holds of ships, and the like, these conveniences cannot be allowed; the defect must be supplied by contrivances, adapted to the peculiarity of the situation. In general, I believe, it may be most easily, and effectually accomplished, by means of two tubes, of diameters proportioned to the size of the apartment to be ventilated, introduced from without; one of which should enter at the top, and the other at the bottom of the room, at opposite sides. There will then be a pretty constant ingress and circulation of fresh air; for whilst the cool external air will rush in through the lower tube; that which is rarified and thus rendered less fit for the purpose of respiration will pass out, by the other: and through the lower aperture, that portion of air, which is become denser, in consequence of having been received into the lungs, or similarly vitiated, will also have a power of escaping. Farther, if three or four  
feet



feet of the bottom tube were to be of iron, and so contrived as to pass through a stove, or place in which a fire might be burnt, it would give an opportunity of introducing the air, when occasion required, in a warm and dry state ; two circumstances as essential to health, in certain seasons and situations, as to comfort ; since we know, that nothing is more apt to encrease the malignity of this disease, than a cold, raw, and damp atmosphere.

Some months ago, a fever of this kind prevailed in the cotton-works at *Backbarrow*, about twenty miles hence, which I was, upon this account, desired to visit. It was evidently of the same nature with that, which had been frequent in other parts of the country, for some time before, and of which we shall have occasion to speak more fully hereafter : so that there did not appear to be the least reason for suspecting it to be peculiar to, or originally produced in the mill (or work-house) ; or in the houses, where the artificers and children are lodged ; which, much to the credit of the proprietors, are airy and comfortable, and afford a striking

contrast to the habitations of other poor persons, whom I have had occasion to see. The same remarks, may be very justly made, with respect to some other works of the like nature, which have fallen under my observation,

I mention these circumstances particularly, because these seems to be a prejudice in the country, against these novel manufactures, which would attribute inconveniences to them and to the working amongst cotton, which in the present instances, do not appear to have any foundation. It is true, that the contagion of several diseases, is capable of adhering to cotton, and of being propagated by that means ; and hence that which is brought from the Levant, is sometimes obliged to undergo the modes of purification, proper on such occasions. This, however, is by no means peculiar to this article, as it is a property it only possesses, in common, with other raw materials, as wool, silk, flax, and the like ; and in no instance do I believe, that any disease has originated from working this valuable commodity ; which by furnishing employment for such  
 numbers



numbers of our industrious poor, and producing so many articles, which contribute to the luxury and convenience of others, is so great a source of national advantage.

When any individuals, of a society, which meets daily, in common work-rooms, are affected with a contagious disease, it will unquestionably be more rapidly diffused, and a greater number of persons, will consequently be affected at one time, than would be the case, if the intercourse was less frequent : which, by a cursory observer, might be attributed to other causes. This, however, shews how necessary it is, in works of this kind, to guard against the introduction of any disease, of this nature ; and to take the most effectual methods, to prevent the propagation of infection, as soon as its existence is discovered.

About the same time, a contagious fever prevailed in so great a degree at *Radcliffe*, in this county, and in the cotton mills there, as to become the object of the attention, of some very respectable gentlemen, in their capacity of magistrates. As these mills, or factories, are now becoming numerous in  
the



the country, and individually employ great numbers of persons; any circumstances which may materially affect the health of those, who are engaged in them, are certainly, matters of public concern. Every praise seems therefore due to the magistrates, who, in consequence of the representations that were made to them, have taken such rational and effectual methods, to prevent the production or propagation of disease in these works, by procuring several gentlemen of eminence in the faculty from *Manchester*\*, to inspect the places, where the sickness was most frequent; and who have, at their request, arranged such directions, as if duly observed, cannot but be productive of the best effects, not only in the particular place, for which they were originally drawn up, and in similar manufactures; but in every other situation, where many persons are employed, in common work-rooms. As with these directions, are also combined observations on defects, in the construction of these buildings, which are frequently met with; and

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\* Doctors *Percival, Cowling, Easton and Chorley*.

and as the class of people who are employed in them, are most subject to the ravages of this fever ; I hope I shall be excused for inserting the observations, which these gentlemen have drawn up, with so much perspicuity and judgment.

“ I. All the casements of the windows,  
 “ and the three large western doors of the  
 “ cotton-mills, should be left open every  
 “ night : the same regulations should take  
 “ place, during the recess from work, at  
 “ noon ; and, as many casements should be  
 “ kept open, in the hours of labour, as may  
 “ be compatible with carrying on the o-  
 “ perations of the machinery.”

“ II. The casements are too small ; being  
 “ in dimension, only about one sixth part  
 “ of the window. They are likewise placed  
 “ high, and parallel to each other—a posi-  
 “ tion obviously unfavourable to complete  
 “ ventilation : for the inlet of the air ought  
 “ to be lower than the outlet.”

“ III. Several fire places, with open chim-  
 “ nies, should be erected, at proper distan-  
 “ ces in each work-room. The stoves, now  
 “ employed, afford no sufficient passage for  
 “ the



“ the offensive vapours generated in the  
 “ rooms ; and encrease the contamination  
 “ of the air, by the effluvia which they emit.  
 “ Turf would be the cheapest, and also a  
 “ very salutary fuel ; for it consists chiefly,  
 “ of the roots of vegetables ; and yields, in  
 “ burning, a strong, penetrating, and pun-  
 “ gent smoke, which is likely to prove as  
 “ good an antidote to contagion, as that of  
 “ wood is found to be, by long experience.”

“ IV. The rooms should be daily swept,  
 “ and the floors washed, at least once every  
 “ week, with strong lime-water, or with  
 “ water strongly impregnated with the  
 “ spirit of vitriol, or the acid of tar. The  
 “ walls and ceilings may be scraped and  
 “ white-washed, at first, every month, and  
 “ afterwards, twice or thrice yearly. Lime  
 “ fresh burnt, and as soon as it is flaked,  
 “ must be used for this purpose, and the  
 “ wash laid on whilst it is hot.”

“ V. During the prevalence of the pre-  
 “ sent fever, the apartments should be fu-  
 “ migated with tobacco. Brimstone might,  
 “ perhaps, be more powerful, but, in burn-  
 “ ing, it yields an acid, which would be in-  
 “ jurious



“ jurious to the cotton.”

“ VI. \* Great attention ought to be paid  
 “ to the privies. They should be washed  
 D “ daily ;

\* On my first visit at *Backbarrow*, the extremely offensive smell in the rooms, where the manufacture was principally carried on, struck me very forcibly. This I was informed proceeded principally from the *Privy*, the doors of which, for indispensable reasons in the œconomy of these works, where so many children are employed, always communicate with the work-rooms. From the pains which had been taken to keep it sweet, without effect, I am persuaded, that whilst the same radical defect exists, in the construction of these edifices, as was in this, all the efforts of cleanliness will be exerted in vain, in endeavouring to remove the nuisance, which an appendage of this kind may occasion. In this opinion I am the more confirmed, from being informed, that the same offensive smell, is generally complained of in works of this nature : and from a subsequent publication of Mr. *Peel*, one of the proprietors of the mills at *Radcliffe*, who in vindication of the state of these cotton-works, observes, that no offensive smell could proceed from the privy, “ because it had been shut up for some weeks ;” doubtless, from the inconveniences it had occasioned.

The difficulty of preventing the smell of a privy from being communicated, to an adjoining apartment, is sufficiently known, from the trouble which is often occasioned in keeping a water closet sweet. For the cold external air rushing through the tube, into the warm chamber, will

“ daily ; and ventilated in such a manner,  
 “ that

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will carry along with it any offensive effluvia, it may collect, in its passage. This was the case here, but in a degree greater, in proportion to the number of persons, who made use of the privy ; and I suspect cannot be prevented as long as it communicates *immediately*, with the building ; and the fæces fall through *oblique* or *narrow* tubes ; or into a *reservoir*.

If the privy joins *immediately* with the main building, there seems to be no other methods of remedying the inconvenience, but in constructing the tubes *large* and *perpendicular*, and carrying a *stream of water*, through the bottom, of sufficient depth and rapidity, to wash away the fæces, as they fall. This was practised at *Backbarrow*, with the most evident good effects : the rooms which were in the highest degree offensive being instantly rendered sweet and agreeable : and the holes of the privy, from which so much offensive vapour was emitted, now furnish a copious supply of wholesome fresh air, from the surface of the running stream below : and will, I hope, contribute as forcibly, in future, to the preservation of health, as there was reason to suppose they might have done, formerly, to the production or propagation of disease.

Where water, in sufficient quantity, cannot be carried through the bottom of the privy ; this edifice must be separated some yards from the main building, with which it should communicate by means of a gallery ; the sides of which being composed of spars or rails, would  
 prevent



“ that the smell arising from them, shall  
 “ not be perceptible in the work-rooms.”

“ VII. The rancid oil, which is employ-  
 “ ed in the machinery, is a copious source  
 “ of putrid effluvia. We apprehend, that  
 “ a purer oil would be much less unwhole-  
 “ some, and that the additional expence of  
 “ it would be fully compensated, by its su-  
 “ perior power in diminishing friction.”

“ VIII. A strict observance of cleanliness  
 “ should be enjoined on all who work in  
 “ the mills, as an efficacious means of pre-  
 “ venting contagion, and of preserving  
 “ health. It may also be adviseable to bathe

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prevent accidents, and admit a free circulation of air, betwixt the door of the privy, and of the work-room ; so that it would be next to impossible, for a perceptible quantity of the putrid exhalations, to enter the latter. The privies to the work-house at *Liverpool*, are constructed upon this plan ; and having upon experiment, been found to answer perfectly well, may serve as a pattern for such works, as would choose to adopt this method.

I have been the more particular upon this head, from a conviction, that it is of essential consequence to the health of factories, barracks, and all places where many persons reside, that they should be kept free, from the offensive vapours, which arise from the privies.



“ the children occasionally. The apparel  
 “ of those that are infected with the present  
 “ fever, should be well fumigated, before it  
 “ is worn again. And the linen &c. of the  
 “ sick, should first be washed in *cold* water,  
 “ lest the steams arising from the heat com-  
 “ municate the distemper to the persons en-  
 “ gaged in that operation. Crofter’s lye,  
 “ when it can be procured, is preferable to  
 “ water. The bodies of those who die of  
 “ the fever, should be closely wrapped in  
 “ pitched cloth ; and interred as soon as  
 “ propriety or decency will permit. Smok-  
 “ ing tobacco will be an useful preserva-  
 “ tive to superintendents of the works, and  
 “ to others exposed to infection, who can  
 “ practise it with convenience.”

“ IX. We earnestly recommend a longer  
 “ recess from labour at noon, and a more  
 “ early dismissal from it in the evening, to  
 “ all who work in the cotton-mills. But  
 “ we deem this indulgence essential to the  
 “ present health, and future capacity for la-  
 “ bour, of those who are under the age of  
 “ fourteen. For the active recreations of  
 “ childhood and youth are necessary to the  
 growth

“ growth, the vigour, and the right con-  
 “ formation of the human body. And we  
 “ cannot excuse ourselves, on the present  
 “ occasion, from suggesting to you, who are  
 “ the guardians of the public weal, this fur-  
 “ ther very important consideration, that  
 “ the rising generation shall not be debar-  
 “ red from all opportunities of instruction,  
 “ at the only season of life, in which they  
 “ can be properly improved.”

It is fortunate that this, like most other  
 infections, is not communicated, unless by  
 the actual contact of the sick person ; of the  
 infected cloaths, or *Fomes* ; or at least the  
 application of the noxious effluvia, in a con-  
 centrated state ; which cannot take place, at  
 any great distance, from either the infected  
 person or articles. However, what occurred  
 at *Philadelphia*, where a fever, of which two  
 hundred persons died, was introduced by  
 hanging tainted cloaths to air\* : and at the  
*Old Bailey*, in 1750, where those persons  
 were infected, who were in that part of the  
 court, upon which the effluvia from the fe-  
 lons,

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\* *Lind on Fevers and Infection*, P. 107.



lons was carried, by a current of air, from a window, whilst those on the opposite side of the court escaped ; furnish precautions, to avoid the wind, which blows over, and may carry with it, any of the steams, which arise from infected articles.

The readiness with which this disorder is communicated by contaminated cloathing, shews the wisdom of the late regulations, which do not admit felons to appear in the courts of judicature, until they have been previously furnished with new cloaths, and well washed ; by which means, the risk of infection, from any effluvia, that might adhere to their usual dresses or persons, is avoided.

As the effluvia arising from persons in many diseases, becomes sooner possessed of those noxious qualities, which the perspiration of the most healthy is apt to acquire, from long and close confinement ; and when inhaled for too great length of time, or in too concentrated a state, is capable of producing the disease of which we are treating ; it furnishes additional arguments, to endeavour to promote a free circulation of air about those that are sick, by withdrawing



ing curtains, and opening doors and windows, occasionally ; as well for their own particular advantage, as the security of the attendants. Upon the same principle may be inculcated the utility and necessity, of changing the linen of sick persons, whenever it is soiled, not only in this, but every other disease. There is a current prejudice against this practice, during the continuance of any acute disorder, for fear of giving the patient cold ; or occasioning some, I know not what, injury : than which nothing can be more groundless. No possible harm can ensue from clean linen, provided it be sufficiently dry.

This contagious matter, being of a very subtile nature, is rather traced by its effects, than known by any particular appearances. The *smell*, which accompanies it, is, however, sometimes perceptible. Thus Doctor *Lind*, says, \* “ In discoursing with several  
 “ who have been infected by patients in con-  
 “ tagious fevers, they general compared the  
 “ first impression to an earthy disagreeable  
 “ scent,

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\* On Fevers, P. 62.

“ scent, received into the stomach, as from  
 “ a grave newly opened, but not quite so  
 “ raw as the cadaverous stench ; and the  
 “ effects of it, shivering and sickness were  
 “ instantaneous. This is a particular smell,  
 “ which cannot be well described, but is  
 “ well known to the attendants about the  
 “ sick. Some compare it to that of rotten  
 “ straw, or it sometimes most nearly ap-  
 “ proaches to the disagreeable affecting  
 “ scent, from a person labouring under the  
 “ small pox, at their turn, tho’ not quite  
 “ so strong.”

During the last winter, whilst a contagi-  
 ous fever was prevalent in the county gaol,  
 the castle of *Lancaster*, this particular smell  
 was very perceptible, near the cells : and  
 was not removed, without much trouble.

As, notwithstanding every precaution we  
 may inculcate, the disease will sometimes be  
 produced : and it may not be always in our  
 power, to keep at a respectable distance, from  
 infected persons or articles ; it will be proper  
 to enquire, (2) what measures will be most  
 likely, to prevent the contagion taking place,  
 in persons so exposed.

Various specifics have been proposed for  
 this



this end ; and if the possession of them, do not induce us to neglect such precautions, as may be deemed indispensibly necessary, the confidence with which those persons are frequently inspired, who make use of them, may be of great moment in producing the desired effects : as it has been observed, that they who have any particular dread of the complaint ; or are under the influence of the debilitating or depressing passions, as grief, fear, or the like ; are more apt to take an infection, than such as have no apprehensions of the kind, or are in good spirits.

Where there is no actual contact of the sick person, or infected articles, it seems pretty clear, that the danger must arise from inhaling the contaminated vapours, either through the nose or mouth, or both : by which means, they are applied to the whole internal surface of the lungs. Hence stopping the nostrils with snuff, tobacco leaves, drossills dipt in camphorated vinegar, and similar substances, upon entering places, where offensive animal steams, or any particular sickness prevails ; and blowing the nose upon coming out, seem rational and  
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necessary



necessary precautions.

For the same reasons, smoking tobacco; chewing *calamus aromaticus*, tobacco, ginger and other aromatic substances, may be very beneficial. There is, however, a precaution, which, whether such substances be held in the mouth or not, should always be kept in remembrance: this is, that the *saliva*, or spittle, should not if possible be swallowed, whilst in these situations. For as the infectious vapours are first received into the mouth, the *saliva* will of course be impregnated, with the seeds of the contagion, and if taken into the stomach, may be the means of giving rise to the disease, by thus introducing into the body the offensive effluvia, now blended with it.

The swallowing a small portion of brandy, or other ardent spirits, either simply in the form of a dram; or impregnated with aromatic or bitter substances, such as garlic, orange peel, peruvian bark, saffron, or snake root, may also be useful upon entering such places; as the infection is so apt to be felt in the stomach, to which organ, and to the mouth and throat, the brandy or tincture

ture, will, by giving a temporary stimulus, the better enable to resist the impressions of the contagious vapours,

As the contagion is most apt to take place, from the actual contact of the infected articles ; it will be prudent to touch as few of the cloaths, of any person who may be sick of this fever, as possible : and of course not to sit upon the bed, whilst paying the necessary visit.

Before we proceed to speak (3) of the methods of eradicating the infection, when it is lodged in clothing, furniture, or raw materials ; or adheres to the walls and floors of buildings, to the decks and sides of ships, and similar articles : it may not be improper to make a few general observations, with respect to those particular circumstances, under which it is found to exist or disappear.

I believe it will not admit of dispute, that a certain combination of causes, is essential to the production of any disease : and that some are, consequently, peculiar to certain climates, seasons, and situations, where only, the necessary concurrence of circumstances takes place. With respect to many of these, the



in the state of the atmosphere, have a considerable effect, in diminishing or encreasing their frequency or violence ; whilst the seasons appear to occasion little difference, with regard to others, especially in the more temperate climates.

The *Small Pox*, for instance, which was unknown to the ancients, and was first observed in *Egypt*, about the sixth or seventh century, is supposed to have originated, in some of the interior parts of *Africa*; whether in consequence of an accidental concurrence of circumstances ; or that those causes which first gave rise to it, still subsist in that country, cannot now be ascertained \* This disorder has however never since been produced *de novo* in any other part of the world. Whenever it has made its appearance, it has always been communicated by means of infected goods or persons. It is capable of exerting its contagious properties, in all climates, and in all seasons.

The *Plague* too, seems at present, to be the peculiar production of some provinces situated

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\* *Mead* on the Small Pox, Chap. I.



situated at the east end of the Mediterranean; whence it is capable of being carried into other countries, and is communicated in the same manner as the small pox. Its contagious properties, however, cease to be exerted, and the disease disappears, in those situations which are most subject to it, when the weather becomes very hot.\* I do not know that it has ever made its appearance in the torrid zone : those ravages which have been the subjects of more modern observations, have been confined to the places above alluded to, or to the temperate climates of *Europe* ; in which last, it is disposed to rage with greater violence, than in the more southern latitudes, where it is more frequent. This disease, would, probably, be as common in the Christian states of *Europe*, as in the *Turkish*, did not its great fatality, induce us to be extremely vigilant in preventing its introduction : and compell us, from motives of self preservation, to take more effectual methods to eradicate its contagion, than we commonly practice, with respect to the small pox,

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\* *Russel's History of Aleppo*, P. 227

pox, or other infectious disorders.

It would seem, that a very dry state of the atmosphere, is unfavourable, to the propagation of contagious diseases, as we also find, that during the prevalence of the *Harmattan*, a singular drying wind, that occurs on the coast of *Africa*, a stop is put to the progress of epidemic and contagious disorders ; and that persons labouring under fevers and fluxes, generally recover during its continuance.\*

The fatal intermittent and remittent fevers of *Italy*, and the hotter climates, are mostly peculiar to certain unhealthy spots : in some of which, if twenty persons in health, were to sleep a single night, the greater part of them would be seized with a severe and dangerous fever, in the morning. At the same time, places at but a little distance, may be as healthy as any in the globe : and this same spot, at present so noxious, might be rendered so too, by, perhaps, draining an adjoining swamp or marsh, which contaminates the air, with its effluvia, and gives rise  
to

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\* Philosophical Transactions. Vol. 71.



to the disorders in question.

The contagious fever, of which we are now treating, seems to be the production of cold and temperate climates ; to disappear in the torrid zone, where its infectious power is at least suspended ; and is totally destroyed by a certain degree of heat. Whilst on the other hand, it has been found, that the severest frost is incapable of mitigating the force of this contagion : on the contrary, cold, especially if accompanied by moist and raw air, and damp situations, increases its powers.\*

§ Dr. *Lind* mentions some remarkable instances, where those men who lay within the reach of the smoke of the cook room, escaped the infection of a fever, which raged on board a man of war at *Spithead* : and that the mortality was much greater, amongst some men, labouring under a fever of this kind, who were lodged in a mill, where there was no fire place ; than amongst others, in the same disorder, at some old houses

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\* *Lind* on Fevers and Infection, P. 20 and 43.

§ *Ibid*, P. 50.



houses, who were not near so well accommodated in other respects, but had the advantage of fires.

Dr. *Blane*, in his treatise on the most effectual methods, of preserving the health of seamen, observes, “ That he has seen so  
 “ many instances of crowding and nastiness  
 “ in ships and hospitals, without contagion  
 “ being produced, and which in Europe  
 “ would have excited it, or rendered it more  
 “ malignant, that the fact is ascertained,  
 “ beyond a doubt. Farther, those ships,  
 “ which bring this infectious fever from  
 “ Europe, in general get rid of it, soon after  
 “ coming to this climate (the West  
 “ Indies) and nothing but the highest degree  
 “ of neglect, can revive it.”

That the *Yellow Fever*, of the West Indies, which is attended with circumstances of the greatest malignity, and highest degrees of putridity, is not infectious in that climate, seems very clear, from the testimony of gentlemen, who could not have failed observing so striking a concomitant, if it had occurred, in the course of very extensive practice. What Dr. *Lind* mentions on the subject, is very singular.

singular. \* “ Men of the greatest learning  
 “ have frequently disagreed in their opini-  
 “ ons, concerning the real or possible ex-  
 “ istence of an infection from many distem-  
 “ pers : of which the yellow fever in the  
 “ West Indies furnishes a very striking in-  
 “ stance.

“ Not long since, this fever became an  
 “ object of consideration, before the right  
 “ honourable the lords commissioners of  
 “ trade and plantation, where it was  
 “ urged (amongst other reasons for not re-  
 “ moving the seat of government and jus-  
 “ tice in the island of *Jamaica*, from *Spanish*  
 “ *Town* to *Kingston*), that there was danger  
 “ from the *Greenwich* hospital, situated near  
 “ *Kingston*, of an infection from the yellow  
 “ fever being frequently communicated to  
 “ that town. On this affair the opinion  
 “ was taken of a physician, who had long  
 “ practised in that island. And by him it  
 “ was judicially and clearly given, that, from  
 “ the yellow fever of that island, there was  
 “ no infection. This was not only the o-  
 F “ pinion

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\* On Fevers, P. 106.

“ pinion of that gentleman in the court,  
 “ but is the belief, as I am informed, of the  
 “ best practitioners in that island ; as also of  
 “ Dr. *John Eliot*, a skilful physician in  
 “ *London*, of Mr. *Nasmyth*, and many others,  
 “ who have had opportunities of being  
 “ well acquainted with the diseases of *Ja-*  
 “ *maica*.

“ On the other hand, our *American* co-  
 “ lonies are under great apprehensions of  
 “ the importation of a yellow fever, in goods  
 “ and in ships, from the *West Indies*, by  
 “ which they have often suffered. Dr. *Lin-*  
 “ *nen*, in his account of the yellow fever, in  
 “ in one of your former volumes, supposes  
 “ it to be infectious ; others have also been  
 “ of the like opinion.—And it is but a few  
 “ years since, when a gentleman dying at  
 “ *Barbadoes* of a yellow fever, his wearing  
 “ apparel and linen, packed up in a chest,  
 “ were sent to his friends at *Philadelphia* ;  
 “ where upon opening the chest containing  
 “ those tainted vestures, the family were  
 “ taken ill ; and the cloaths being unluckily  
 “ hung abroad to be aired, they presently  
 “ diffused the contagion of this yellow fever  
 “ over



“ over that town ; by which the gentleman, who furnishes me with this relation, was an unhappy sufferer, and of which upwards of 200 persons died.”

Now, these seeming contradictions, are easily reconciled, if our position be just.

The contagion of this fever, is disposed to be active in cool and temperate climates. If it be transported to the hotter climates of the West Indies, by persons labouring under it ; those contagious properties, for which it is so remarkable here, cease to be exerted ; nor has the infection contained in cloaths or other articles, its usual effects. Farther the most malignant fever of that country, which is attended with circumstances, that would indicate the greatest likelihood of contagion with us, is at least so seldom infectious there, that the occurrence is totally denied by those, who have had the best opportunities, of making observations. But take the cloaths, impregnated with the effluvia of persons, who have been sick of this very fever, into a more temperate climate ; and they are then capable of shewing contagious properties, and of communicating an infectious fever, in its most virulent and

dangerous forms.

That the contagion of fevers, is totally destroyed, by a certain degree of heat ; and that far short of injuring the texture of woollen or linen cloaths, seems clear : but the precise degree which is capable of producing this effect, has not been ascertained by a Thermometer, that I know of.

Dr. *Lind*, (to whose judicious reflections on this subject, we are so much indebted), observes, that he has seldom or ever known a proper application of *fire* and *smoke*, to be unsuccessful in producing the happy consequence, of effectually purifying all tainted places, materials and substances ; the judicious application of which, he considers as the true means, appropriated for the destruction and utter extinction, of the most malignant sources of disease.

The smokes, which he recommends for this purpose, are those of *tobacco*, *brimstone*, *arsenick* or *gunpowder* : how far these are endowed with powers superior to the smoke from many other substances, I cannot determine ; but from their peculiar pungency and other properties, they may, perhaps, be disposed

disposed to act *chemically*, upon the contagious matter, and thus prove additionally useful, in occasioning its destruction.

The smoke from burnt wood, has been recommended, as particularly useful for this purpose : but that this, however durably and plentifully applied, is of itself inadequate to the effect, is evident from the circumstance of a fever of this kind, being the epidemic disease of the Highlanders in *Scotland* ; although it is well known that every part of their houses, furniture, cloaths and persons, are penetrated by, and (if I may be allowed the expression,) steeped in the smoke of *peats* ; which are composed almost wholly of the roots and fibres of vegetables.

The fumigation powder used by the *Russians* at *Moscow* in the year 1771, to prevent and destroy the infection of the *Plague*, was composed of *Sulphur*, *Nitre* and certain *resinous* and *aromatic* substances ; which last was thought by some, who had the best opportunities of making comparisons, \* only to enhance the price, without adding any thing

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\* *De Mertens, de Peste,*



thing to the efficacy of the fumigation ; which differed nothing, materially, in the manner of its application, from that recommended by Dr. *Lind* for destroying other infections.

It would certainly be very desirable, if we could say, that by any process, we could eradicate every particle of contagion, contained in a given portion of infected cloaths. This is well known to exist, sometimes, in a very minute form ; and if the application of the *smoke* of particular substances, be alone adequate to this effect ; who can be certain that it may not lurk in the fold or seam of a garment, and thus escape our endeavours to destroy it ?

I confess I am inclined, upon taking all the circumstances together, to believe that more is owing to the degree of *heat* applied, than to the effects of mere fumigations : however as some of these smokes are possessed of very pungent qualities (especially those of Sulphur and Nitre) and are besides recommended upon such respectable authority, I would by no means advise the omission of them, until it shall have been fairly decided by

by experiment, how much of the purification of infected articles, depends upon the *smoke* arising from these substances ; and how much upon the degree of *heat*, to which they may be subjected.

§ I should however think that including for some hours, in an *oven* properly heated, such articles either linen or woollen, as are supposed to contain any taint, would be a necessary precaution, previous to their being delivered to be washed or scoured. A gentleman, upon whose information I can place the greatest confidence, has acquainted me, that in the case of a family, who had been severely handled by an *ulcerated sore throat*, they had afterwards taken the precaution of applying heat, to such articles as had been near the sick, by shutting them up for a few hours, in an oven ; which was attended with the most beneficial effects in destroying the contagion. The disorder, however, was reproduced in the family, and being traced to its origin, was found to have taken its rise again, from a stuffed dog, which had  
been

been the plaything of one of the children, and had been neglected to be included in the oven, with the other articles.

I have of late, recommended in all possible cases. this mode of applying *heat*, to the cloaths which have been used by the sick ; and have had no reason to doubt of its efficacy in destroying any contagion which might adhere to them : the principal difficulty, which occurred on this head, was in obtaining permission of the proprietors of ovens, to allow them to be used for this purpose.

Supposing a house or ship to contain the infection of a contagious fever, the modes of purification will, then, be briefly these.

Every method is to be pursued to introduce and promote a free circulation of air, by opening the doors and windows ; and lighting fires in open chimneys : and when this cannot be done, by the application of the tubes, (Page 18).

All the varieties of cleanliness are to be practised, by scraping the floors of houses, and the decks and sides of ships, and washing them first with soap lye ; and afterwards  
with



with vinegar, or spirit of vitriol and water.

The walls of houses are also to be scraped, and a wash of lime and water applied ; the lime being recently flacked, and laid on whilst it is hot. After which the farther destruction of any contagion, that might escape these processes, is to be attempted by the proper application of *fire* and *smoke*.

\* “ There are three methods commonly  
“ practised, for purifying ships or vessels  
“ after the company has been removed out  
“ of them.

“ The first is by burning of *tobacco*. A  
“ quantity of tobacco is spread on several  
“ fires, made with such pieces of old rope,  
“ as are called junk. These fires dispersed  
“ into different places of the ship, their heat  
“ and smoke are afterwards closely confined  
“ below for a considerable time.

“ The second method is by charcoal fires  
“ strewed with *brimstone*. The heat and  
“ steam of these burning materials for this  
“ purpose, must likewise be long and close  
“ shut up.

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“ The

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\* *Lind* on Fevers, P. 44.

“ The third method of purification is  
 “ performed, by the addition of *arsenick*, to  
 “ the materials of the second process, in the  
 “ following manner. After stopping up all  
 “ the openings, and every small crevice of  
 “ the ship (as was also necessary in the pre-  
 “ ceding process), a number of iron pots,  
 “ properly secured, are to be placed in the hold,  
 “ orlope, gun-deck, &c. Each of these are  
 “ to contain a layer of charcoal at the bot-  
 “ tom, then a layer of brimstone, and so  
 “ alternately, three or four layers of each;  
 “ upon which the arsenick is to be sprink-  
 “ led, and on the top of it some *oakbum*,  
 “ dipped in tar, is to be laid to serve as a  
 “ match. The operators upon setting fire  
 “ to the oakbum must speedily leave the  
 “ place, shutting close the hatchway by  
 “ which they came up.”

In all these cases, great caution must be  
 used, upon re-entering the holds of ships so  
 fumigated. The hatchways, ports, win-  
 dows, &c should be thrown open, for a day  
 or two, before, any person can safely ven-  
 ture down.

The process for purifying an infected a-  
 partment

partment, or house, is precisely similar to these : and the same precautions, are of course necessary, upon re-entering it.

\* In another place, the same respectable author recommends the smoke which arises from the burning of *gunpowder*, when it has been made into a paste by wetting it, for the same purposes ; and applied pretty nearly in the same manner.

Cloaths, bedding, and other articles being allowed to remain in a ship or room, thus heated and filled with these pungent vapours, will stand a good chance of being freed from any infection which may adhere to them : after which, they may, for still farther security, be washed in *cold* lye, previous to their being put into hot water.

These various methods of prevention and purification, may be readily and effectually practised upon the cloaths, furniture and apartments of persons in certain situations in life ; and upon shipping, public buildings, and factories : but it is still to be feared, that notwithstanding every precaution, which

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may

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\* *Dr. Lind.*



may be enjoined the poorer classes of people ; yet, while their wants necessitate them to the modes of life that generally obtain amongst them, the spreading of a contagious disease, once introduced into a family, or even a community, seems almost unavoidable. Crowded together, in small, and frequently dark, or damp rooms ; those in health often sleeping in the same bed with the sick, from a want of any other resting place ; without that change of linen which contributes, at once to the luxury and health of those in more affluent circumstances : we must, whilst we deplore our inability to apply the same successful modes of prevention to them, as to those in other situations, be content to endeavour by charitable and medical assistance, to alleviate those ills, the existence of which, is inevitable ; and will probably be rendered still more severe, by the continued application of the causes, which either give rise to, or encrease the malignity of the disease.

## C H A P. III.

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*An account of the TYPHUS, or low contagious Fever, as it appeared in the town and neighbourhood of LANCASTER in the years 1782, 1783, and 1784.*

A Fever of the particular species, which is mentioned in the foregoing chapters, was epidemic at *Carlisle*, in the year 1781\*, but I did not see any person affected with this disorder at *Lancaster*, until the summer of 1782. Whether it was originally produced here, or imported from a distance, I was unable to ascertain; the houses in which it first appeared, being equally favourable for either supposition. From that period to the present, it has continued to rage, with more or less frequency and fatality.

It has with very few exceptions been confined to the poor and labouring classes of people: but when persons in better life were

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\* *Heysham* on the Jail Fever.

were attacked, the symptoms were not less severe than with others. The seasons or weather, seemed to have little influence either in extending, or retarding its progress: sometimes we had many persons labouring under the disease ; at other times, it would almost totally disappear, and then break out again ; generally in families, whose intercourse with others, who had been sick, afforded a ready conveyance for contagion.

Some months ago the same disease raged with uncommon severity in the neighbouring town of *Ulverstone*, and in various parts of this county : and appeared about the same time, in the cotton-works at *Backbarrow*.

The number of persons in this complaint who have fallen under my observation in *Lancaster*, is about five hundred, of whom thirty-four died : which is upon an average, rather more than one in fifteen.

Of these, one hundred and sixty-eight were *men*, whereof have died twenty, which is nearly one in eight.

Two hundred and thirty-six were *women*, whereof have died eleven, which is about one in twenty-one.

Ninety-



Ninety-four were *children* under 14 years of age, whereof have died, at most only three; that is one in thirty-one. But with respect to two of these there was from their tender ages, and other circumstances, some ambiguity, as to the identity of the complaint, which was the cause of their deaths.

At the factory or cotton-mills at *Backbarrow*, the total number of persons, who have been affected with this fever, is one hundred and eighty, of whom seven have died : which is upon an average, about one in twenty-six of the whole.

Of these, thirty-eight were *men*, of whom five died, being rather more, than one in eight.

Eleven were *women*, of whom two died, making rather more than one in five.

One hundred and thirty-one were *children*, under 14 years of age, of whom, none have died.

Taking the sick persons at both places, their numbers, and average of deaths, in each class, will stand as follows.

Men,	206,	Dead, 25,	rather less than 1 in 8.
Women,	235,	Dead, 13,	more than 1 in 19.
Children,	225,	Dead, 3,	about 1 in 80; upon the most unfavourable supposition, but, perhaps not 1 in 120.

The average of deaths upon the whole number, will be not quite 1 in 16.

From the above state, we see how much more dangerous, the disorder proved to men than to women ; (the number of the latter at *Backbarrow*, being of themselves too few, to contradict the general average,) and how seldom it proved fatal to children : forming in this respect a striking contrast to the *ulcerated sore throat*, where the concomitant fever is a *typhus*, and requires the same general methods of treatment with this.\*

Notwithstanding children mostly got through the complaint, the disease frequently handled them with great severity ; the time of confinement to their beds, being long, the symptoms violent, and the subsequent emaciation and weakness considerable.

§ Dr. *Cullen's* generic definition of this disease is “ That it is contagious : that the  
“ heat of the body is very little encreased ;  
“ that

\* *Fothergill* on the Sore Throat. P. 11.

§ G. V. TYPHUS.

“ Morbus contagiosus ; calor parum auctus ; pulsus  
“ parvus, debilis, plerumque frequens ; Urina parum  
“ mutata ; sensorii functiones plurimum turbatæ ; vires  
“ multum imminutæ.”



“ that the pulse is small, weak, and for the  
 “ most part frequent ; the urine but little  
 “ changed ; the functions of the brain very  
 “ much deranged ; and the strength of the  
 “ body much diminished ;” all which cir-  
 cumstances were found to occur in the course  
 of this fever.

Those who were attacked perceived pains  
 in the back, about the loins ; and in the  
 limbs ; a giddiness in the head, as if under  
 the effects of intoxication ; a listlessness and  
 aversion to motion ; want of appetite ; dis-  
 agreeable taste in the mouth, accompanied  
 with thirst ; sometimes coldness and rigors,  
 with alternate flushings of heat. In this  
 state they frequently remained several days ;  
 generally without either applying for medical  
 assistance, or taking to their beds.

Under the influence of this first attack, it  
 was not uncommon for them, (especially the  
 men,) to go to their usual occupations ; mis-  
 taking the symptoms of the disease for a  
 slight cold, or what they termed *lazinefs*,  
 which was to be got the better of, by appli-  
 cation to work : however where violent ex-  
 ertions were made, under these circumstances,



the disorder suddenly encreased, and generally terminated fatally.

This state of attack was mostly noticed by the family, who would inform you, that the patient had *complained*, two or three days (as it happened) before he was quite ill and obliged to take to his bed.

The nights, in the beginning, were generally passed in a state of drowsiness and dreaming ; and were productive rather of fatigue than refreshment.

In the progress of the complaint, a general restlessness and uneasiness became more evident and troublesome ; accompanied by a disposition to be disturbed by dreams, which were often frightful. If the patient lay still a little while, as if asleep, he generally awoke, starting up, alarmed, and for some time in a manner delirious, until he was convinced that what he fancied had occurred, was only in the course of dreaming. The confusion of the head became more permanent, accompanied with complaints of noise and ringing in the ears ; and a tendency to be affected with nausea and sickness. The whole head was frequently affected with pain, but especially

pecially above the eyes, where it was often acute. The *cheeks* were in many instances flushed, the redness circumscribed, and in appearance much like that which occurs in hectic or pulmonic complaints. The *eyes* assumed a dull muddy look, which upon nearer inspection, appeared in a great measure owing to the vessels of the *adnata*, being filled with the red fluid, as in some cases of *ophthalmia*. The *tongue*, which was generally dry, and often hard, was sometimes moist ; sometimes covered with a whitish or brown fur ; sometimes a stripe of a brownish colour in the middle, and of a natural appearance at the sides : at other times tho' of a natural colour, the surface was shining and as it were glazed ; and sometimes as hard and rough as a fish skin, and the patient, with great difficulty understood when attempting to articulate. These two last mentioned appearances, generally occurred, towards the fatal termination of the disease.

As the complaint advanced, the restlessness and uneasiness encreased ; the patients were continually turning and starting ; often moaning and complaining to themselves ;



and if they fell into a short slumber, when they awakened, they would frequently raise themselves erect in bed, and attempt to get up. Their actions were, although sometimes quick, yet always weak ; and their exertions not long continued. Upon being spoken to, they for the most part, would answer questions tolerably rationally, but soon fall again into the same rambling muttering way.

The *pulse* during all this time, was generally small, weak, and very frequent ; from 100 to 120 or 140 strokes in a minute.

The *urine* varied but little from its usual appearances ; it was mostly of an amber, or rather paler colour : there was seldom any sediment, but frequently a cloud was suspended, in which small black specks, might be seen.

The *belly* was sometimes costive ; and at other times a considerable, and debilitating looseness attended it.

The *skin* was generally dry ; and at other times a gentle diaphoresis attended the whole course of the complaint ; and sometimes profuse general sweats ; these last, were however



ever for the most part, confined to the breast and head.

In the progress of the disease, if it terminated fatally, the delirium became more confirmed; the patient was more uneasy, spitting out, and refusing to swallow, what was offered to him, whether food or medicine; frequent twitchings and tremors occurred, which with a lifeless dull eye, with sordes about the edges, and the *adnata* discoloured by a red suffusion; the mouth and teeth, black and furred; a tremulous intermitting pulse; deafness; and inability to articulate, generally closed the scene.

Such was the most general succession of symptoms; but sometimes after the first attack, the disorder wore rather a different aspect: the weakness and inclination to be still and quiet, being more perceptible, as well as a greater disposition to be sick and faint, upon being moved. The face was rather pale and sunk. The delirium that occurred was now of the low and muttering kind. The tongue inclined to be moist, with *aphthæ* on its sides, and on the interior parts of the cheeks and lips. All the symptoms of debility were  
more

more strongly marked ; and it was in these cases, that *Petechiæ* most frequently made their appearance, which were sometimes of a bright red colour, at other times purple, and in a few instances quite black

Although the pulse, was in general frequent, to the degree I have mentioned, this was not universally the case. In one woman who died covered with *Petechiæ*, and who for several days had been in such a comatose state, as not to be able to take either food or medicine, the pulse was never more frequent than 66 strokes in a minute. In another woman who also died, under similar circumstances, the pulse until the day preceding her death, never exceeded 72 strokes in a minute ; and about a month ago I saw a woman at *Backbarrow*, who had been ill three days, and had then taken to her bed, with all the symptoms of formed fever, such as pains in the small of her back and limbs, head-ach, sickness and thirst, whose pulse beat exactly 68 strokes in a minute.

It was no uncommon circumstance, for convulsive twitchings to occur early in the complaint, which were stronger, and there  
were



were more of the muscles brought into contraction, than in the case of *Subsultus tendinum*, which is apt to come on, at the close of these fevers. Sometimes also a hiccup, which was often obstinate. And in some the pupil of the eye appeared uncommonly dilated, as in the *Hydrocephalus internus*; and where this was the case, convulsions, or a fatal stupor were apt to supervene.

*Deafness*, was very common, both in those who recovered, and those that died; but it was generally more complete, in the latter termination.

Two cases occurred where the patients lost the powers of articulation, together with that of hearing; although they appeared to understand, by signs, what was wished to be communicated to them. Both these cases terminated fatally. One of them, remained near a fortnight, in this state, after the symptoms of fever had subsided.

*Hemorrhages* from the nose were frequent; in some instances very profuse: and I believe the death of one patient, was owing to the weakness brought on, by this evacuation.

The same disposition to effusion of red blood



blood also occurred in other parts, especially from the *gums* : and the breath was rendered highly offensive, in consequence of that which adhered to the teeth, and other parts of the mouth, becoming putrid.

One patient was carried off by a most profuse hemorrhage, from the intestines, after the fever had left him : and another by repeated similar evacuations of the same nature. In this last case, there was an evident hardness on one side of the abdomen, which from its soreness and other circumstances, appeared to be the source of the hemorrhage.

In one case, which also terminated fatally, there was a remarkable vomiting of a matter which in appearance resembled coffee-grounds ; but without any fetor.

In two cases in the same house, the head did not appear considerably affected ; but there seemed to be a fatal determination to the lungs, accompanied by wheezing, and a considerable expectoration of concocted and frothy matter, as in the *Peripneumonia Notha*, or *Catarrhus senilis* ; and with that leaden cast of the complexion, which is observed

observed in such affections. Both these patients died with marks of pulmonic congestion, and subsequent suffocation.

Although I looked with the utmost anxiety for *critical days*, and for *intermissions* or *remissions*; I cannot say I ever perceived that the complaint was disposed to shew any of these appearances, except at the very beginning, when, after the exhibition of an emetic, I have thought there was some abatement of the symptoms. The disease was sometimes of greater and sometimes of less duration, as well as violence; and the return to health was generally gradual, without those remarkable changes, which are observed in fevers, that are disposed to assume a remittent or intermittent type.

The same may be said of the *calor mordax*, which I never could distinguish, separated from that disagreeable heat, which is commonly perceived, upon touching the skin of persons, who labour under any kind of febrile indisposition.

The *Prognostics*, were generally to be drawn from the degree of the affection of the *brain*. If this kept tolerably free from  
I delirium,



delirium, and the patient could also take food and medicines, but especially the former, the event was generally favourable. However, if other *viscera* essential to life, were considerably disordered, the danger was equally great, although the brain might not be primarily, or principally affected. But for the most part, the danger or safety of the patient, was to be estimated, from the functions of the *Sensorium*, being more or less disordered.

Towards the fatal close of all diseases, the symptoms are in general, so much alike, and so irremediable, that those which occurred here, at that period, scarcely deserve a particular enumeration, or attention.

The patients, when they began to recover, after the violence of the fever had abated, were generally in an extremely weak and emaciated state; and required much care and attention, with respect to exercise, food, and exposure to the air, to prevent a return of some dangerous symptoms. I have seen several of these, left in so great a state of debility, as to be literally, scarcely alive; being apt to faint when any attempts  
were



were made to alter the position, especially to set them in an erect posture : the pulse weak, and beating scarcely 60 strokes in a minute, as if the exertions of the heart and arteries were barely sufficient, to carry on the circulation ; the voice feeble and drawling ; and the eyes hollow and languid. These were generally cases where the head had been much affected, and other symptoms had been violent.

In an instance of a fever of this kind, some years ago, a fatal *delirium* was brought on, after the patient appeared to have every symptom of recovery, in consequence of reading, and attempting to answer a long letter, on intricate business ; a circumstance which shews how necessary it is, to guard against the effects of exertions of the mind, as well as of the body, when the strength is so much reduced, as it generally is in these fevers.

## C H A P. IV.

*Of the Cure.*

AS I considered this fever, to be perfectly analagous to that, which attends the *ulcerated sore throat*; I set out with the same general plan of cure, as I had experienced to be successful in that disorder; and upon this principle, holding evacuations as pernicious, and tending to encrease that state of debility, which accompanied, and gave a dangerous tendency to the complaint, I endeavoured to support the strength of the patient by means of *tonic* and *cordial medicines*, and a *nutritious diet*. With this view, I gave the *Cortex* in substance, as frequently and in as large doses as the stomach would bear; and *wine* freely, either by itself, or mixed with water, or in sago or other gruels, as it seemed most palatable; in the quantity of which I was only limited by the effect. In general an ounce of the *cortex* and about a bottle of wine, was as much as could be conveniently taken in one day:  
but

but if relief from sickness or faintness, or any other symptoms ensued, I never stinted the dose; on the contrary, the difficulty was to induce the attendants to give the wine, in sufficient quantity. In one case that fell under my care about eight years ago, of a lady in an *ulcerated sore throat*, two bottles of madeira, and two of port wine, were taken in twenty-four hours, exclusive of a quantity of *Huxham's tincture of the bark*, *Confectio cardiaca*, and other cordials, with the most evident good effects. Since which time I have not had the least scruple of prescribing wine, liberally, in fevers of a low kind or putrid tendency \* In short, the quantity necessary seems to be in proportion to

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\* I do not by this mean to insinuate, that the exhibition of bark in large doses, and the free use of wine, in fevers of a low kind, and of a putrid tendency, originated with me. It was a practice that was inculcated in the schools of physic at *Edinburgh*, as long ago as the year 1768, and probably before that period. I have adduced this instance, to shew that very large quantities of wine, may be given in these cases, with advantage: and I mention it particularly now, because I understand that the origin of this practice, is attempted to be referred to a much later date.



to the degree of weakness that occurs ; in which case, as the relief obtained is generally obvious, the frequency of the repetitions of this cordial, will be indicated in proportion to the recurrence of faintness, and other symptoms of debility.

If a *Diarrhæa* supervened, a quantity of *Confectio Japonica*, (or some medicine of a similar nature) was added, sufficient to check, or at least moderate the evacuation ; which as it only tended to encrease the prevailing debility, and never that I could observe, even when the head was affected, gave any relief, I always considered as a morbid and dangerous symptom ; especially if the evacuation was considerable, and protracted to any length of time. Similar sentiments upon this subject have been entertained by others.\* I have however frequently seen patients, three or four days without a stool, and no bad consequences ensue ; on the contrary, a costive habit was upon the whole, rather a favourable occurrence. If any uneasiness appeared to be occasioned, by the retention

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\* *Heysham* on the Jail Fever. P. 54.

retention of feces, it was easily obviated, by an emollient glyster.

Sir *John Pringle*, observes that some persons, who were infected by the felons at the *Old Bailey*, escaped without a fever by a looseness coming on. This was however in the beginning of the disorder and might carry off the noxious effluvia that had been received into the stomach ; and its effects be in some respects similar to those, produced by an early emetic, of which we shall have occasion to speak hereafter.

If the pain in the head encreased, and became very troublesome ; I have often seen it relieved, by rubbing the forehead and temples ; or finally, if more obstinate, the whole upper and posterior parts of the head (shaved) with an embrocation, composed of, two ounces of *camphorated spirits of wine*, and three drams of *vitriolic æther*. When the disorder appeared to be disposed to affect the functions of the *sensorium* considerably, I thought shaving the head necessary, especially in the cases of men, (where the danger is proportionally so much greater) to make room for the early application, of a large  
blister



blister, which I have frequently seen followed by good effects. If the head-ach then was considerable, with tendency to delirium, and no relief was obtained by the above embrocation, a blister on the upper part of the head, or the nape of the neck, was often of service, in moderating or removing these symptoms.

In the course of the complaint, it frequently happened that the stomach partaking of the general debility of the system, could not retain the *cortex* in substance ; and at length contracted such an aversion to it, that the farther exhibition of it, became impossible. No solicitations could induce the patients, in many instances, to comply with the requisitions to take it, either regularly, or in quantities, from which its proper effects could be expected ; or if forced down. it lay heavy and painful at the stomach, and was, after a while, thrown up again ; by which means the tendency to *nausea* was encreased, and the patient hurried by the operation.

Under these circumstances I had recourse to the following *formula*, which I now commonly use in this disorder, for supporting  
the



the *vis vitæ*, and correcting any disposition to putrefaction, that there may be in the *primæ viæ*; and which purposes I have found it to answer extremely well: and besides, it not only sits easy on the stomach, when the bark in substance will not, but also helps to correct the tendency to nausea and vomiting, which so often occurs.

*R. Cort. Peruviani rubr. contus. unc. i.  
Coque in aq. fontan. lib. ii. igne lento ad lib. i.  
Cola et fiat Decoctum.*

*R. Decocti superioris unc. vi.*

*Tinctur. Cort. per. comp. unc. ii.*

*Elixir Vitrioli acid. drach. i. M.*

*Capiat aeger Coch. ii. vel iii. omni biborio  
vel triborio.*

If a greater degree of faintness than common was perceived, the elixir of vitriol was exchanged for *Spt. Vol. Aromatic. dr. ii. vel iii.* though it did not then appear to be equally palatable, or grateful to the stomach.

If the sickness and tendency to nausea, was more urgent, and the thirst considerable, with a hard dry tongue; the elixir of vitriol was left out, and to a dose of the above medicine, a scruple of the salt of wormwood

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was

was added, and given with a spoonful of lemon juice, in the act of effervescence.

I have also given in the beginning of the complaint a mixture of *Spiritus Mindereri*, and *camphorated julep*, every two or three hours, with a view to promote a diaphoresis; which intention, it answered very well : but except in the very beginning, I have no reason to speak of it, as being productive of any particularly good consequences.

Having, when the *red bark* was first introduced, found that half an ounce, was adequate to the removal of a tertian ague, (which disorder was then very frequent in this country,) as effectually, as double the quantity of common bark ; I have always made use of it since, in preference to the other. After taking notice of the bad consequences of a *diarrhœa*, it seems almost needless to add, that when that effect was produced by the *cortex*, it became necessary to add 5 or 6 drops of *laudanum* to each dose of this medicine ; or a sufficient quantity of *confectio japonica*, or some other preparation of a similar tendency, to suspend, or moderate the evacuation.

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The useful exhibition of *tartar emetic*, or any medicine that has a tendency to excite vomiting, I have every reason to believe, is limited to the very first attack of the disease. If an emetic be given when the head-ach, shivering, bad taste in the mouth, want of appetite, or pains in the limbs, first come on; and be followed by some white wine whey, with a teaspoonful of spirits of hartshorn, or some other volatile; or by a dose of the julep before-mentioned, with thirty or forty drops of *laudanum*, (especially if the pains in the limbs, or any other symptoms be considerably troublesome;) so as to excite a copious diaphoresis, I believe this fever may be often literally nipped in the bud. It was in this way and at this period, that Sir *John Pringle*, found emetics useful.\* An ounce of the *cortex*, should, if possible, be got down in the course of the ensuing day; and repeated on the three or four succeeding ones.

In more advanced stages of the disease, in those instances, where I saw emetics exhibited, they were attended with evidently bad

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effects ;

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\* Observations on the diseases of the army, P. 306, 307.



effects ; by fatiguing the patient, and inducing a long continued nausea and puking, and sometimes a looseness; all which contributed to encrease the prevailing debility.

When wine could not be got down, in sufficient quantity ; turned sour on, or disagreed with the stomach ; or was not to be obtained ; a spoonful or two of any spirituous distilled water, as the *aqua nucis moschatæ*, or *aqua juniperi composita*, mixed with a little sugar and water ; or simple brandy or rum, in the same manner, were attended with good effect : and some persons got well through the complaint, who took nothing but these compositions, in moderate quantities. We had however instances of two men, who upon their beginning to recover, brought on fatal deliriums, by drinking too freely of undiluted spirits.

This course was attended with most evident service, when the symptoms were moderate, and the *delirium*, if any occurred, was rather of the mild, low, and muttering kind, in opposition to a restless uneasy state of the same nature, attended with quicker motions ; when the tongue was moist and furred,

furred, or *apthæ* appeared, in opposition to a hard or dry tongue; when there were *petechiæ* or hemorrhages; and when the marks which characterize debility, were particularly striking. But in the progress of the disease, the plan we have just now laid down was interrupted, and obliged to be varied because it seemed, in whatever manner put in practice, to be inadequate to the removal of a particular set of symptoms, which frequently appeared. Further I thought that when the delirium was attended with a hard dry tongue, and quick motions, that these symptoms were encreased by the exhibition of bark and wine: but whether this might have arisen, from not being able to throw them in, in sufficient quantities, I cannot say, as under these circumstances, it was very difficult to induce the patients to swallow any thing bulky, or that was disagreeable to the palate. However the same inconvenience from the use of wine has been remarked by Sir *John Pringle*. §

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§ Observations on the Diseases of the Army, P. 316.



The case to which I allude and which so frequently occurred, is as follows.

After the symptoms of the first attack, such as lassitude, shivering, pains in the back, limbs and head, the patient takes to his bed : his nights are passed without sleep ; or if he falls into a short slumber, he awakes disturbed by some unpleasant dream ; he starts up and wants to get out of bed ; he is continually turning and changing his posture ; complains much of pain, or confusion in his head ; of noise in his ears, and thirst. His tongue is either dry and hard, or covered with a thick, disagreeable brown fur. His eyes begin to grow muddy, and assume a dull look. The pulse is about 120 strokes in a minute, and small. The skin dry, or bedewed with partial sweats, which produce no alleviation of the complaints. These symptoms continue, and grow more alarming ; uneasy days succeed to restless nights ; the patient is exhausted by pains, and by watching ; the inclination and ability to take nourishment, diminishes ; the delirium, which for a while, only took place upon coming out of his slumbers, is now more constant ;



stant ; and if some means cannot be found to interrupt the progress of the disease, slight convulsions, total refusal of food, and insensibility, are certain to ensue ; which with cold extremities, and involuntary evacuations, close the scene.

In this state of things, I have too frequently seen all the usual practice exhausted, without success. The *bark* has been given, in as large doses as the patient could take, and repeated as frequently as the stomach would admit ; *wine* has been given freely ; *camphor*, *castor*, *musk*, *contrayerva*, and the whole train of nervous stimulating medicines, have been exhibited ; these have been joined to, or exchanged for *antimonials* and *James's powder* ; *blisters* have been applied, repeatedly ; also *pediluvia*, and warm fomentations to the lower extremities. The only alleviation of the symptoms in such situations, which seemed fairly to result from these medicines or applications, sometimes followed the exhibition of musk, and the application of blisters to the head or neck ; or the use of the pediluvium, or fomentations, applied by means of flannels, wrung out of warm

warm water, to the lower extremities. The good effects of these remedies proved however generally of short duration ; and were too often looked for in vain.

At length tired with being so repeatedly disappointed, in my expectations of the good effects, that were to have resulted from these medicines and applications, I had recourse to *Opium*, which I heard, had been given in very large doses, in this fever, at *Edinburgh*; and from the great variety of cases in which I have tried it, I can venture to recommend it, as a most valuable medicine, where the brain is so much affected, that delirium actually exists : but particularly, for removing or at least greatly relieving that restless and uneasy state, which is so apt to exhaust the patient with thirst, pain, and watching, and to terminate in delirium. In short for mitigating those symptoms which give a violent form, and dangerous tendency to the disease.

As the accounts of the effects of the large doses of opium, which had been given in these cases of *typhus*, were at least contradictory, I was solicitous, on my first exhibiting this medicine, to see what authorities could be adduced



adduced in support of the practice : and in what doses it had been given, when the complaint was more strictly febrile.

\* *Sydenham*, recommends opiates, in those cases of want of sleep, restlessness and delirium, which occur in the decline of fevers : (for he excludes them, before the twelfth day of the disease ;) but adds, if they are omitted until the fourteenth, their effects will be more certain and advantageous. The tendency of the precautions he lays down with respect to their use, appears to be, that the inflammatory state which occurred in the beginning of the epidemic, which he refers to, should have been carried off by bleeding and other evacuations, previous to their exhibition.

The opiate he recommends is the *laudanum Lond. ad griss* ; besides which there are some others to the like effect, which are composed of ingredients not, at present, in much use.

† *Dolæus*, following *Sydenham*, whom he quotes as his authority for the use of opium, in cases of febrile delirium, extols this medicine  
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\* De Febre continua Annorum, 1661, 62, 63, 64.

† De Phrenitide et Delirio.



highly. He excludes it however in some situations where it will probably be found useful.

His mode of exhibiting it, was to dissolve five grains of opium in a ten ounce julep, of which three spoonfuls were given at a dose, and repeated at intervals, until the proper effect took place.

\* *Boerhaave* and his commentator *Van Swieten*, appear also to have taken their ideas on this subject from *Sydenham*, and limit the exhibition of opium to the decline of fever. The latter however seems very willing to admit its utility, in cases of febrile delirium, whenever there shall be no longer any apprehension, of an inflammatory state of the brain.

He advises us, to begin with small doses, and to encrease them gradually, until the desired effects be produced.

¶ *Dr. Lind*, gives us accounts of the good effects of *opium*, in intermittent complaints, particularly in the hot fit, when it is attended

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\* Comment. in *Boerhaave Aphorismos*. § 702 & § 709.

¶ Appendix to the Diseases of hot Climates, P. 342.

ed with that severe head-ach, and restlessness, which threatened to bring on delirium.

He gave the *tinctura thebaica*, only in doses of from *gt. xv. to gt. xx.*

\* Dr. Cullen, when speaking of *opium*, in his lectures on the *materia medica*, in the year 1761, says, that in cases of nervous fever, where the *vis vitæ* is apt to sink, opium may be used as a stimulus : that where remissions are distinct, it may be used in the same manner, as bark, and together with bark. *Wine* too, he observes, is an analogous remedy to opium. He farther adds, that he has seen fevers attended with very strong spasmodic affections, where camphor, musk, &c. were used, where opium was of much more consequence ; and even that he has seen it remove delirium itself : and indeed he believes it may be said universally, that there is no case in which we use wine, where we may not also employ opium.

In his lectures on the practice of physic in the year 1769, he also adds, that *opium* is particularly useful, in every case of deli-

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\* Lectures on the Materia Medica.



rium that arises from irritation. He contends too, that there is a species of delirium, apt to occur in the course of continued fever, which wanting the characteristics of the phrenitic or inflammatory state, arises from irritation, and is only to be cured by large doses of opium.

\* All these authorities, whilst they admit the efficacy of *opium* in certain cases of febrile delirium, object to it as hurtful, when this arises from an inflammatory state of the brain. But as in the fever which is the subject of our present animadversions, the symptoms which characterize debility, in opposition to inflammation, are strongly marked, even from the beginning; the state to which the objections are made, does not appear

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\* To these, might, perhaps, have been added Dr. Jones; but as one of the facts which he has adduced, and upon which great stress is laid, has been the subject of much contradiction, and dispute: and as his work appears to have been written under the influence of prejudice, and tending to exalt some persons and some opinions, at the expence of the reputation of others; I confess his observations did not carry that conviction, which they might have done, had he appeared to have been actuated by more liberal motives.



pear to have any existence here. On the contrary, that state of debility which was induced, in the latter end of *Sydenham's* epidemic, in consequence of evacuations, occurred in the early part of this. Farther, I believe it is now generally allowed, that diseases have not commonly the same inflammatory tendency ; nor do they in general require, or bear, such large evacuations, as they did in his time.

If opium then was found adequate to the removal of so high a degree of morbid affection, as delirium ; it seemed probable that the effects of this medicine would be more certainly efficacious in a lower degree of the same complaint, and in the earlier periods of this disease, provided some inflammatory appearances did not forbid its exhibition. And it is in these more early stages, that I have seen it particularly advantageous : so that I now lay it down as a maxim, that whenever pains in the limbs, or back, head ach, and the like, occasion restless nights, that opium may be administered to obviate these symptoms, with the best consequences : and although a total annihilation of the disease, may

may not immediately follow, we shall, by the assistance of this medicine, be able in general, to prevent delirium from coming on ; and by ensuring a more mild form of the disorder, have a much better chance, of conducting the patient in safety through it.

I have been informed from authority on which I repose the greatest confidence, that the exhibition of opium in larger doses in the more advanced periods, and more dangerous states of the disease, has also been attended with happy effects ; \* but having myself had no opportunities of seeing it successfully given, under such circumstances, I shall decline speaking upon that point. But if it be capable of being thus useful, in the later stages of the disorder, it will certainly stand a much better chance of success, if given before the strength is much exhausted, or the symptoms indicating extreme danger, have made their appearance.

We now come to speak of the dose ; and the manner of exhibiting this medicine.

Opium

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\* To the amount of 120 drops of *Tinctura Thebaica*, at a dose. *Doct. Anstlie's Tincture*



Opium requires the same precautions, in its use, that all medicines possessing particularly active qualities, do : for whilst given in too small quantity, the desired effects are not produced ; so in an over dose, it may be converted into a poison. I do not know that the smallest quantity capable of inducing death, has been ascertained by experiment ; or the largest that may be taken with impunity : much will depend upon original idiosyncrasy or peculiarity of constitution, which cannot always be known *a priori* ; and upon the degree and nature of the morbid affection, at the period the opium is administered.

It seems to be generally allowed that there is a considerable analogy, betwixt the effects of opium, and of spirituous liquors or wine : and that constitutions, are perceived as different with respect to their powers of bearing large doses of the one, as of the other. Thus almost every person may recollect some of his acquaintance, who can carry off two bottles of wine, with less inconvenience, than another can a pint of the same liquor ; and I have known a person capable of drinking a



a bottle of coniac brandy, glass for glass, in the same manner and in as little time, as another would a bottle of port wine ; and with no greater apparent effects. Similar differences must have been observed by every practitioner, on the first exhibition of opiates. I have said on the *first exhibition*, because it is well known, that if we begin with small doses, these may be gradually increased in such a manner, as to become habitual ; and be taken with advantage, or at least impunity, in quantities, that would have been in the highest degree dangerous, in the beginning of such a course.

In certain states of morbid affection, the system is insensible to such doses of medicines, as would have been very powerful in the usual state of health ; or in disorders of a different nature : and thus it becomes necessary to augment them, in order to produce the desired effects. But as the morbid affection abates, the usual sensibility to impressions will return. This is particularly the case with respect to opium, which should therefore, be always given with caution ; and a due attention to the degree of disease present, and

and to its encrease or abatement.

In the case of the lady I alluded to formerly, who was capable of taking four bottles of wine in twenty-four hours with advantage, (the relief which was obtained from it, being clear and immediate, in obviating faintness and sickness;) this was in consequence of the extreme debility, with which she was then affected : for as she began to recover, the calls were proportionably less frequent, and smaller quantities were adequate to produce the same effects ; and ultimately when restored to health, as many glasses, as she had taken bottles during her illness, could not be borne without inconvenience. It must here be likewise obvious, that the same quantity of wine could not have been given in the decline of the disorder, as was exhibited in the more dangerous periods, without evident bad consequences.

So with respect to *opium*, we know that in maniacal cases, those of locked jaw, or *tetanus*, mortifications, and similar complaints ; it may be given with safety and advantage, in such doses as could not be taken by a person in health, without considerable

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inconvenience, if not danger.

But even in states of disease where opium is manifestly proper, an over dose may be attended with the same bad consequences, as in other situations. I have an unfortunate case in my eye, where an attempt was made to cure a violent convulsive disorder by means of opium. The patient was a robust man, who was affected with severe and frequent twitchings. One day, he took two grains of solid opium, which was repeated at the interval of two hours, and again at the end of other two hours without any sensible effects. Six grains having produced no alteration in his symptoms, when taken in this way, he took three grains the day following, at a dose, and three grains more at the distance of an hour, without any perceptible consequences. The succeeding day, the spasms being more violent than ever, he took thirteen grains of the same medicine in the course of five hours, without the least effect on his convulsions: nor did this quantity produce either sleep, delirium, or thirst. He was then ordered to take sixty drops of liquid laudanum, which was repeated four times



times, at the interval of an hour betwixt each dose. This had no sensible effect in diminishing the spasms, or affecting him in any other manner. The next day the dose was augmented to eighty drops, and repeated four times at the same intervals. He slept about an hour after taking the four doses of laudanum, and then awaked seemingly in his usual state of health, the opium having had no effect on his convulsions; he went to bed about ten o'clock; at twelve the nurse observed that he was in a very profound sleep, but did not attempt to awaken him: at six in the morning she found him still in the same state, as before, and on endeavouring to rouse him, found it impossible. Every method was used for that purpose, that could be thought of, but in vain: he died about eight o'clock that morning. On dissection an *ecchymosis* was found in his stomach: no other morbid appearance in the alimentary canal; nor in the brain. Here thirteen grains of opium were given in the course of a few hours, without any bad consequences: at another time 240 drops of laudanum, which are equal to about nine

grains and an half of opium, also, without any sensible effects ; but when on the succeeding day, the dose was encreased to 320 drops of laudanum, which is equal to thirteen grains of opium, (a quantity that he had taken before, in a solid form, with impunity), fatal consequences seemed to follow the exhibition of the medicine. It must not however be suppressed, that a pint bottle was found in his bed, which contained some whisky, and of which it was supposed that he had drank.

\* *Dolæus* gives us an instance where a scruple of opium, dissolved in a clyster, which was exhibited in a complaint in the bowels, brought on apoplectic symptoms, and finally death.

In the case of a poor woman in this neighbourhood in a consumption, a few years ago, for whom two drams of *tinctura thebaica*, were ordered, of which she was directed to take a few drops every night, to allay the tickling of her cough; the whole having been given by mistake, comatose symptoms ensued

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\* Encyclopædia, P. 322.



fued, which terminated fatally within twenty-four hours.

Many other instances might, if necessary, be adduced to shew, that whilst there are some constitutions endued with considerable powers of resisting the usual effects of wine, spirituous liquors, and opium : or in other words, of bearing large doses of them without any bad consequences : that there are others as remarkably susceptible of their impressions. And whilst some morbid affections enable the constitution to bear larger quantities of opium, than it could do in health ; the repetition and augmentation of the doses are to be proceeded in, with proper caution, as even here, what amounts to an over dose, may be productive of the same bad consequences, as in other cases.

With these considerations in my mind, I began to exhibit this medicine. As it is when joined to camphor, so efficacious in producing a determination to the skin ; and as this last medicine has been looked upon as an useful one in these fevers, I first gave it in the following *formula*.

*R. Opii pur. gr. i. ad griss.*

*Camphor.*



*Camphor. gr. x. ad gr. xv. f Bol.  
Hora decubitus sumendus.*

In this dose, when the symptoms were mild, or in the early stages of the disorder, it was attended with all the expected good effects; but when the disease had been some-time formed, and the symptoms more violent, it was not adequate to the purpose: I then augmented the quantity, and the *formula* which I now generally use is as follows:

*R. Tinctur. Thebaic. gt. lx.*

*Julep. e Camphora unc. iss. M.* and sometimes with the addition of thirty or forty drops of *antimonial wine*, when the tongue is particularly dry and hard, or the thirst considerable.

Of this the patient took two-thirds in the evening, and the remainder at the end of two hours, if sleep or at least rest did not ensue. There was in the *acme* of the disorder, generally a necessity for the whole quantity, but seldom any occasion for more. I have however in some, though few instances, found it necessary to give twenty or thirty drops more of *tinctura thebaica*, at the end of other two hours. For it must be observed,

served, that unless the sedative effects of the opium, be produced, that I never saw any good effects from this medicine. By this I mean, that it should be given in a quantity, sufficient to induce sleep or at least rest, ease and quietness, in opposition to restlessness and watchfulness: and until the patient ceases to be sensible of the head-ach, and pains in the limbs or other parts of the body; which is generally effected by the above dose. With respect to any farther quantity it must be left to the discretion of the practitioner, and result from the necessity of the case. From the return of head-ach and tendency to delirium, I have sometimes been obliged to repeat the doses in the morning: but in general the truce obtained by the opiate given in the evening, made the succeeding day pass on tolerably easily, and the patient took the cordial mixture (P. 73) and food better; which last I always found to be a favourable symptom, as much as a total aversion to aliment, was a bad one.

It however happened not unfrequently, when the complaint spun out to a considerable length, that the patients obstinately refused



fused the mixture and all other medicines, except the opiate at night, which with the cordial regimen consisting of broth, and gruels with wine, were the only things taken during the greatest part of the illness : and these I have often seen adequate to the removal of the symptoms of the disease; and to the recovery of health.

It is almost needless to say that the dose of the *laudanum*, or *tinctura thebaica*, was in the cases of children, diminished ; and proportioned to their respective ages. In general I gave about 20 or 25 drops, to those that were from twelve to fourteen years of age.

As the force of the disease abated, smaller quantities were adequate to the inducing sleep or rest, with the other desired effects : 30 or 40 drops of the *tinctura thebaica*, were generally sufficient in the cases of adults. Where any considerable stupor appeared on the succeeding day ; it was proper to omit the opiate on the following night, and until this stupor and heaviness had gone off : and where the nights were passed easily, and the patient rested well, the circumstances which  
render



render the use of opium proper or necessary, did not seem to exist.

Nothing could be more striking, than the contrast which might be perceived in a morning, betwixt two patients in similar situations, one of which had taken the opiate the preceeding night, and the other had not. The same observation might also be made upon a patient, who by any accident had omitted the opiate in the evening, after having taken it a few preceeding nights. In the one case, you would hear that the night had been passed quietly and easily, and find the patient in the morning refreshed by the rest, he had obtained, and with few complaints: in the other, that he had been restless, disturbed and uneasy, with a continuance or aggravation of all the disagreeable symptoms.

The effects of the opiates were sometimes a remarkable cessation of the febrile symptoms; though in general no considerable alteration in the pulse was occasioned by them; but rather a mitigation of those more violent affections, which threatened to bring on delirium, or to exhaust the patient by pain,

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sickness

sickness or watching ; and they seemed, as I have before observed, to keep the disorder within bounds, and induce it to go through its stages in a more mild, and less dangerous manner.

Having had no opportunities of seeing the effect of fixed air, administered in the form of *Bewley's julep*: \* or of the *spiritus vitrioli dulcis* in the manner recommended by Dr. *Carmichael Smyth*, I am not qualified to speak of these preparations. I cannot however but think them well worthy of notice ; the one appears calculated to allay thirst, and obviate putrescency, which often occurs in the *primæ viæ* ; and the other has been found useful in abating the frequency of the pulse, and inducing *apyrexia*.†

We come now to speak of the treatment of what may be called *anomalous* symptoms, which were apt to occur in the course of the complaint, such as *sickness* and *vomiting* ; *diarrhœa* ; *convulsive twitchings* ; *hiccup* and *pains* in various parts of the *chest*.

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\* *London Medical Journal*, vol. 2. P. 149.

† *London Medical Communications*.



The *sickness* and *diarrhæa* have been already noticed.

The *twitchings* of the arms, and whole body, did not appear to be those small motions, which attend the last stage of these fevers, and are called *subsultus tendinum*: they occurred earlier in the complaint than these, and were accompanied with a considerable degree of strength, and a more forcible exertion of the muscles. I do not by this mean to assert, that *subsultus tendinum*, did not frequently happen in the last stages of this fever; but merely to point out a state of convulsive motions, which often occurred, especially when the head was much affected, that was distinct from that case.

To obviate these convulsions, I gave ten grains of musk, and five grains of camphor, every six hours, and they generally disappeared in the course of a few days. The *biccup*, might probably be referred to the same head as the other convulsive motions, and gave way to the same remedy, musk: but the giving that medicine in sufficiently large doses, not agreeing with the pockets of the poor, a very respectable practitioner



ner \* informs me, that he has found two teaspoonfuls of a mixture of *tinctura fœtida* and *spiritus volatilis aromaticus*, given every hour or two, mostly carried it off.

A pain often attacked the side, or breast, with sharp stitches, which affected respiration. A blister applied immediately over the pained part, appeared to be the remedy appropriated, for the relief of these symptoms.

Hemorrhages from the nose, were most effectually checked, by dossils of lint, moistened in vinegar, and then rolled in powdered alum, thrust up the nostrils.

If I were then to recapitulate in a few words, what I would recommend as the most eligible mode of treating this fever, it would be as follows.

As soon as the symptoms of the first attack are perceived, let an emetic be given, (ten grains of *ipécacouba*, and one or two grains of *tartar emetic*†:) let this be followed by

\* Mr. Fell of Ulverstone.

† A very ingenious gentleman (Dr. Thornton) who did me the favour of looking over my manuscript, observed

by a *bolus* composed of ten grains of camphor, and a grain or a grain and an half of opium ; or thirty or forty drops of laudanum, in an ounce of camphorated julep, at bed time. These will have a tendency to encourage a diaphoresis, especially if aided by some warm wine whey, with or without a teaspoonful of spirit of hartshorn, *spiritus volatilis aromaticus* or the like, as appears proper and agreeable. By these means such  
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ved, that as the disease is ushered in with symptoms of debility, and as puking may arise from this state ; and is oftener the effect of a weak than a foul stomach : that there is here an ambiguity with respect to the propriety of augmenting this sickness by the exhibition of emetics. And farther, that it is easy for the best observer to be deceived with respect to their effects, when immediately afterwards stimulant medicines and cordials are given. If Sir *John Pringle* gave stimulants in the manner usually recommended, after the operation of the emetic, what he attributed to the puke, this gentleman should be persuaded, was the consequence of the other medicines.

These observations appear to me well worthy consideration. Practice has authorized, and almost sanctified, the use of emetics, at least in the early stages of the disease : but it is from a fair comparison of cases where they have been exhibited, and where they have been omitted, that we can only form a true estimate of their proper application.



a remission of the symptoms, are frequently induced in the morning, as to allow of throwing in the *cortex*, of which at least an ounce should be taken in the course of the day, joined with broth, gruels, nourishing diet, and wine, in such quantities, as the stomach and head will bear, without inconvenience. If by these means the symptoms of fever are kept under ; this course, both with respect to medicine and diet, should be continued for several days, to fortify the habit, against a recurrence of the disease.\*

Should the above practice not have had the desired effect ; or application not have been made until the fever has been more formed, and the thirst, lassitude, restlessness, and head-ach are more urgent ; I would give the opiate at night as directed (P. 94) : and rub the forehead, if the patient complained much of pain there, with the embrocation (P. 71) : and as the stomach will now be apt to loath the *cortex* in substance, from large doses of which the same good effects do not seem to ensue, as formerly, I would give through the day, the cordial mixture (P. 73)  
joined to

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\* With the omission of the emetic, after the first exhibition.



to broth, & wine in gruels, or any other form, in such quantities, as seemed indicated, by the degree of faintness and lowness. If the confusion and pain in the head, appeared to be considerable, it should be shaved and rubbed all over with the embrocation (P. 71); and this particularly, if the subject be an adult male, in whom we have seen that the danger is proportionably so much greater, than in females or children: and if in the course of the next day, there appears to be a tendency to delirium, a blister should be applied over the whole upper part of the head, continuing the same course with respect to medicine and diet as has been recommended before. Finally, if symptoms of delirium, continue to threaten, or have actually come on, blisters may be applied to the nape of the neck, and behind the ears; and the pediluvium, or warm fomentations to the feet, and lower extremities: still giving the opiate at night, and repeating it in the morning when necessary; together with the same tonic cordial medicines, and diet, during the remainder of the disorder. If any looseness occurs it is to be checked by the addition of a sufficient quantity of the *confectio japonica*, or some medicine

medicine of a like tendency. Sickness and vomiting are to be obviated by saline medicines in the act of effervescence ; convulsions and spasms by musk and camphor ; and pains or stitches in the side or breast, by blisters near the parts affected.

This mode of treatment, I can recommend from having in a great variety of instances, found it successful. The cases that have terminated fatally have been generally those, where application was made late ; or the directions that had been given, not properly complied with.

After having taken notice of the tendency which confined air and filth have to produce this complaint, it is almost needless to insist upon the necessity, of properly ventilating the apartments of the sick ; of the practice of cleanliness with respect to their persons and cloathing ; and of removing every thing dirty and offensive from their rooms : indeed without proper attention to these circumstances, and a sufficiently nutritious diet, the aid of medicine will be invoked, with little prospect of advantage.



## C H A P. V.

*Conjectures, on the Proximate Cause of the disease ; and the operation of medicines.*

PHYSICIANS have generally divided the causes of diseases, into two heads ; viz. the *remote* or *exciting* ; and the *proximate*, on which the existence of the disease depends. The former has been already sufficiently noticed, in the first parts of this treatise ; and the proximate cause should in point of order, have preceded the method of cure, because this being once ascertained, the other would have followed as a natural consequence. But when I considered how much men of the greatest learning and abilities had been mistaken in their ideas of the proximate causes of diseases ; and that most of the systems advanced, have instead of guiding us to true knowledge, only tended to shew with how much ingenuity error might be maintained ; I thought it safer to leave those methods of treatment, which had

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been



been ascertained to be eligible, upon their own solid basis : and if we could afterwards assign rational causes for symptoms, and for the operation of remedies, that this should be done, without warping a practice which having been found successful upon experiment, ought not to be bent to accommodate an hypothesis. It has indeed but too often happened, that men of the greatest eminence in the profession, have formed theories of diseases in their closets, at an early period of their lives, from not sufficiently extended views of the phænomena of nature, to which their subsequent practice has been adapted : and those remedies, whose operations did not suit the principles they had espoused, have been rejected, however useful they might have been found upon a fair trial ; or that they have been either before or since experienced, in the hands of others : whilst, on the contrary, medicines of the most inert or dangerous qualities, have been brought forward with the zeal of new discoverers ; recommended with the confidence of prejudice ; and persisted in, with the obstinacy of error.

This has certainly contributed much to retard

tard the progress of our art; and has prevented it from attaining that degree of perfection which it would probably have done, had its professors, employed themselves, in observing the actual effects of medicines, and the occurrences of the animal œconomy, instead of forming visionary theories : which being merely the offspring of fertile imaginations, without the solid foundation which facts and experiments afford, have been demolished by their cotemporaries, or successors; who had only to point out the flagrant absurdities, with which they abounded, to expel them from the situation in which they had been so improperly placed; and who perhaps, (strange to tell,) have substituted others, as visionary and fleeting, in their stead. What cause then, has any person, who reasons of the future from the past; and who to day may sport this or that proximate cause of disease, in preference to another, to hope that his, shall not also find its *hic jacet*, in the course of a few weeks or months; and escape being interred in the common sepulchre of its predecessors? It is truly mortifying to professional vanity, to recollect, how



few of those medicines, that are the most useful and approved, we owe to the sagacity of the learned, and the inductions of studious speculation: and how many to accidental discoveries, and to the practice of illiterate persons, and even of savage and barbarous nations.

The implicit obedience, and servile deference, that was for so many ages paid to the opinions of *Aristotle*, and other antient writers, has been justly supposed to be the cause which confined our stock of experimental knowledge, during those periods, to so small a compass: and as the evil extended to every branch of science, physic amongst the rest experienced its torpid influence. But as we now live in an age, in which our inclination to obtain a knowledge of facts, and the phenomena of nature, which we make the ground work of our reasoning, is too strong to be influenced by any blind attachment to mere opinions; which we have seen may be entertained, as erroneously by the wisest and most enlightened, as by the dullest and most unlearned: and as we do not reject the conclusions which may be fairly deduced, from any new discoveries, in whatever quarter their  
light



light may dispel the darkness of ignorance, or of error, we perhaps stand a chance, of coming nearer the truth in our conjectures, than formerly. But how wide the gulph may be, which yet lies betwixt us, and the object of our pursuit, who can ascertain ?

The inclination to assign rational causes for the effects which pass under our observation, is however so congenial to our nature, that the medical man may surely assume a liberty, and indulge himself in an excursion, into the land of conjecture, in common with his fellow cultivators of science. And if in exploring that region, where the most sagacious have been bewildered; instead of wandering at random, and yielding to the impulses of a delusive imagination, we keep in our hands the clue of experimental knowledge, and are guided by the star of calm reason, over the solid ground which facts afford ; who knows but some portions of this *terra incognita* may be accurately explored, and some landmarks be ascertained, which may conduct us to the objects of our pursuit ?

Since the study of anatomy has been so successfully cultivated, and the distinctions  
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betwixt natural and morbid appearances accurately defined; expectations have been reasonably formed, that the dissection of dead bodies, would tend to throw considerable light upon the causes and seats of diseases: and consequently be of benefit to future sufferers, in similar cases.

With respect to *chronic complaints*, the result of the enquiries, has generally been the discovery of, some material disease of a *viscus*, whose functions were essential to health and life; and whose altered organization, whilst it assigned an adequate cause for the fatal event that had taken place; afforded the melancholy satisfaction, that although it was out of the reach of the medicines that had been employed, it would be difficult to say what other course, could have been instituted, with better prospects of success. The discovery too, that certain symptoms proceed from incurable diseases of the *viscera* may, as the late ingenious Dr. *Hunter* has observed \* lead to practices important to humanity; by inducing us to reject those

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\* Medical observations, vol. 6.



rough medicines, or operations, which can only teize and torment a miserable human being ; and incline us rather to attempt to palliate, what we cannot radically remedy : and thus add comfort and ease to that portion of life, through which the patient has yet to pass.

The dissections of chronic cases, may also have another good effect ; for the symptoms of internal affections, are sometimes so obscure, as to give rise to mistakes, as to the seat of disorders, which these may tend to elucidate, and identify.

The dissections of persons who have died of *acute* diseases, may be productive of more evident advantages ; for by ascertaining what particular *viscus* is affected, when certain symptoms occur, we may also frequently discover, not only where the seat of the disease has been, but also in what the morbid deviation consists : which having been effected in a short period of time, we shall in similar cases, in future, stand a much better chance of successful practice, by the early application of remedies, at once efficacious and rational.



It must not however be inferred, that we can upon the anatomical inspection of a dead body, always discover a cause, adequate to the event produced ; since it is a confession, that has been made by those, upon whose accuracy and fidelity we can best depend, that the cause of death has frequently escaped their most diligent enquiries, when inspecting the bodies of such as have died of acute diseases : ‡ a confession which others have also been under the necessity of making. This however is not always the case ; and we are furnished with many instances, with respect to the disease, which is the subject of this treatise, where upon dissection, injuries of the *viscera*, but especially the *brain*, have been found, which were as adequate to produce death ; as a mortification of the intestines in the case of a fatal *ileus* ; or the liver-like appearances, and sanious effusions, into the cellular substance of the lungs, in pulmonic diseases.

The danger of this disorder is in general to be estimated in a *ratio* compounded of the

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‡ Morgagni de sedibus et causis morborum, lib. XL,

the morbid affection of the brain, and the general debility ; but mostly with respect to the former, as if the disorder be not accompanied by delirium, the method of cure, is as obvious in theory, as it is easy in application. A dangerous determination to, and affection of other *viscera*, especially the lungs may also occur, in the course of the disease which will have a similar influence on our conclusions, and prognostics, as when the disorder principally affects the brain.

On dissection of such as have died of this fever the brain, frequently, I may almost say, constantly, shews evident marks of local affection, and injured organization ; of increased determination of fluids ; of distended and ruptured vessels ; of effusions and suppurations\* : to which the symptoms of head-ach, flushed cheeks, red *adnata*, and delirium correspond.

I have to lament, whilst custom, did not authorize, the anatomical inspection of the bodies of such as died here, of this disease ; that prejudice was so strong, against intro-  

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\* *Pringle's Observations on the Diseases of the Army,*



ducing a practice, from which useful information might have been derived. However, as there is no doubt of this disease being of the same nature, with that, in which the appearances that occurred upon dissection, are recorded by Sir *John Pringle* and Dr. *Lind*; the general conclusions from these, may be reasonably transferred to other cases, which have been affected in a similar manner.

In accounting for the symptoms of this fever, I would then say, that the remote causes, formerly enumerated as giving rise to this disease; or the contagious effluvia; in their operation on the human body, induce a state of debility in the system; which is evinced by the prostration of strength, loss of appetite, weakness of pulse, and other symptoms, which occur evidently in the beginning; and increase in proportion to the duration, and violence of the disease: and it would seem that whilst this debilitating power influences the whole system, that the vessels of the brain are, from the peculiar laxity of their fibres, apt to be affected with a greater proportional  
loss



loss of tone, than happens in other parts of the body ; and hence become distended with an unusual quantity of fluids, which from their encreased bulk, and subsequent effusions, and suppurations, occasion head ach, irritation, delirium and death. As there do not appear to be any marks of inflammatory *diathesis*, in the course of the complaint, these occurrences in the brain, cannot be supposed to arise from that cause ; and may equally be accounted for on our supposition. We know too, that in the plague, a disorder where the symptoms which indicate debility and a sinking of the *vis vitæ*, are very striking ; that the heart and larger vessels, are apt to lose their tone so far, as to be considerably enlarged, and even burst in consequence. \*

The same circumstances, that so frequently take place in the brain, in this fever, appear also to occur, at times, in other *viscera* : and hence, the symptoms of pulmonic affection † ; the effusions of coagulable lymph, which

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Dr.

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\* *Chenot de la peste.*

† P. 64 of this treatise.

Dr. *Lind* found an the surface of the *pleura* and in the *pericardium* || : and the affections of the intestines mentioned by Sir *John Pringle* §.

Whilst the vessels of the brain are of a laxer texture, than those in other parts of the body ; and the fibres of males are more robust, in general, than those of females ; and of adults than of children : is there with respect to these last, less disproportion betwixt the relative strength, rigidity, or force of cohesion of the vessels of the system in general, and those in the head, than in adults, and especially males ? If this be so, can we account for the general escape of young subjects, whilst the disorder proved so much more fatal, to grown up persons ; by saying, that in consequence of this more equal state of the fibres, the debilitating power would also operate in their systems, more equally than in the case of adults : and of course, the organization of the brain would not be so apt to be injured with them, as when the comparatively greater loss of tone in the vessels

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|| On fevers, P. 95, 96.

§ Observations on the diseases of the army, P. 303.



vessels within the *cranium*, than in other parts, naturally occasioned, a proportionably greater accumulation of fluids there ?

If then the disease consists in debility and a loss of tone, in the whole system, but especially in the vessels within the *cranium*, which by their increased bulk and effusions, irritate and disorder the *sensorium* ; and finally by compression, and the destruction of the organization of the brain, induce death ; we can see why the bark and that nutritious and strengthening course, formerly recommended, are found useful : also why opium, blisters and the pediluvium, which obviate the effects of these causes, prove serviceable : and on the other hand, we can readily discover why purging and evacuations, encrease the danger : and why emetics which determine more blood to the head, as well as fatigue the patient, are so hurtful in the more advanced stages of the disease.

Inflammations, and congestions both of red blood, of *serum*, and of purulent matter, may occur in many parts of the body, without considerable inconvenience ; but this can only be in portions endued with little sensibility,



bility, or whose functions are not essential to life : as they can never happen in those circumstances otherwise, but they must be attended with pain or danger. This is particularly the case, with respect to those which take place in the brain ; where they either occasion acute pain, or produce stupor, or delirium. This first is generally the forerunner, and indicates a less degree of morbid affection than the latter.

Now, although pain may be only a consequence of distention of the vessels, and of fluids accumulated; and therefore to render the patient insensible to it for a few hours, may be said to be merely palliative, and not tending to remove, what we have laid down as the cause of the disease : yet as the effects of this sensation so long continued, happen in a system composed of irritable fibres, where the disorder of one *viscus* extends in a greater or less degree to the whole ; if that rest and sleep, by which the constitution is refreshed, and enabled to support itself under any fatigue, be totally taken away ; so great a degree of languor and debility will be superinduced, in consequence of suffering unre-  
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remitted pain and watching, as must encrease the force of those causes which gave rise to the symptoms, that constitute the disease. So that although in procuring temporary rest and sleep, by means of opium, we may only obviate a symptom; yet if we can by this means interrupt the disease in its course, and prevent its making so great a progress, as it would have done but for this check, it may fairly be reckoned as so much gained. The opium appears in its operation to procure a cessation of pain and watchfulness; and to induce sleep, or at least a state of rest; and by this means, gains a truce for the constitution, to rally her hard-pushed powers, and make a better resistance afterwards.

I dont know but the effects of opium, in relieving this state of watchfulness, head ach and delirium, may be illustrated, by what I have observed in the case of *ophthalmia*. Every one knows how obstinate this disorder sometimes is. I have seen general bleeding repeated; cathartics given; blisters, leeches, *collyria* of various kinds, applied, without the desired effects: and at length after a considerable space of time, the inflammatory appearances go gradually off; and



and amongst the variety of applications, perhaps a very inert one, made use of, when the disorder was giving way, has gained praises, to which it was ill entitled, as its failure in subsequent cases, has evinced. In the course of some of these cases, the pain has been so violent, as to prevent sleep in the nights; and in order to procure a little ease, an opiate has been given at bed-time, which has been generally attended with so much advantage to the patient's feelings, that it has been repeated, and continued, until the eye has taken a decided turn for the better. Now in looking back to some of these cases, I have observed that we might date the abatement of the complaint, from the time the opiate began to be exhibited; which although little attention was paid to, at the time, otherwise than as a mere palliative, had I believe the greatest share in effecting the cure. For although the pain, in the first instance, might only be an effect of the accumulation of blood, and the distention of the vessels and nerves, yet it afterwards seemed to act as a cause, in rendering the disorder tedious and obstinate; and finally when the sensation of this *stimulus*, was taken off for



a few hours daily, the vessels seemed to recover their proper tone, and the appearances of inflammation disappeared.

The same effects from opium, are observed with respect to *catarrhus affections* and *coughs*, where there is an expectoration of a thin acrid matter; the irritation which this occasions, prevents the rest, necessary, for its acquiring a properly concocted state. Stop the unavailing, unprofitable irritation of this cough, a few hours, by means of an opiate, ~~and~~ a kindly expectoration often succeeds, with relief of all the symptoms.

*Thirst*, when to a great degree, is with respect to its effects on the system, to be put upon the same footing with pain: this troublesome sensation, will also receive a temporary suspension, from the opiate.

Although I have mentioned the case of head-ach and delirium, as occurring in consequence of a larger quantity of fluids than usual, being accumulated in the brain; and which conclusion we are, I think, warranted to draw, from appearances both during the disease, and on dissection; I would yet, by no means be understood to assert, that they may

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not also happen, in this, as well as in other disorders, where there is no reason to suspect such circumstances. *Delirium* we know may originate from pain and other affections in distant parts of the body ; in which case the brain becomes disordered, from that general law of the system, by which the deviation from health, of any particular portion, is more or less communicated to every other. In some cases this may be, by a general inflammatory *diathesis* which extended thither, gives the appearance of phrenitic delirium : at other times delirium may occur with a pale face, and a natural and weak pulse, and a sunk eye, without any redness or suffusion of the *adnata*. This last kind generally arises from an unusual irritation of the nervous system, whether in consequence of pain, or any other cause ; and the operation of opium, in the removal of it, whilst it seems generally advised as the proper remedy, is, from the admitted effects of that medicine, sufficiently obvious. Our creator in furnishing us with nerves, which are the organs of all our sensations, and consequently of pain, has kindly endowed the animal frame, with qualities,  
which



which confine the perception of it, to a certain degree: for whenever it goes beyond a particular point, such impressions are communicated to the brain, as induce that state which we call *delirium*; when the sufferings of the person, as a rational being, either cease to exist, or are at least suspended. By this means the pains we may suffer in diseases, or accidents, to which we are obnoxious; as well as those, which the ingenious cruelty of man, would sometimes wish to inflict on his miserable fellow creatures, are in some respects limited: since however the body may appear, in either case, to be agitated, yet after the delirium is come on, the mind is no longer susceptible of what passes; and the impressions are made upon a mere machine.

I have hitherto, avoided speaking of the dissolved state of the blood, and of the putrefaction of the fluids, which have generally formed so large a portion of the proximate cause, of these fevers. I have done this, because, whilst I think with Dr. *Milman*, that there is not sufficient evidence to found the doctrine on; and that many circumstances militate against the justness of the idea: it



seems to be of the less consequence, because, the same medicines that obviate debility, are in general resisters of putrefaction : and I think no one would reject such articles, as have been found highly beneficial upon trial, for others, which might be supposed more proper, merely from their possessing stronger antiseptic properties, upon substances out of the body.

In addition, to what this very learned gentleman, has advanced, upon the subject of the state of the blood, in putrid fevers ; I would observe, from the testimony of Dr. *Lind*, that he frequently found the coagulable lymph, in a most tenacious state, in the bodies of such persons, as had died of these fevers ; and that the blood, which had been taken from a patient labouring under an infectious fever, so far from being in a dissolved, much less in a putrescent state, was found to resolve into its usual component parts ; and was covered with a yellow, thick, tough *gluten*, impenetrable to the finger\*.

In those hemorrhages from the nose,  
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\* On fevers P. 96.

which have come under my observation, (as I never saw any blood taken from the arm, in this fever,) the appearances were not different from what are commonly observed, on these occasions; neither in colour, or texture when cold (for I once caught some of the blood in a teacup); nor upon the linen where it had flowed.

But although the putrefaction, or even dissolved state of the circulating blood, in this disease, be at least problematical; there is no doubt but extremely offensive smells, are frequently observed, during the course of the complaint, which indicate a tendency to, if not the actual presence of putrefaction. But this, I apprehend, may be easily explained, without inconsistency; because, from the debilitated state of the solids, and a diminished force of cohesion in the fibres, the confined fluids, will have a tendency to ooze from the mouths of the relaxed exhalants; or to escape from the ruptured sides of the vessels, and occasion *hemorrhages* from the nose, gums, *uterus*, and other parts; or form *petechiæ*, in various portions of the cellular membrane. Now it is well known, that there

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is no animal substance, more apt to become putrid, when retained in the heat of the human body, than extravasated blood : so that when these effusions take place, they will generate offensive smells, and promote a tendency to putrefaction, in proportion to their extent and duration. I have mentioned them as occurring in the mouth and communicating excessive *fetor* to the breath : the same may happen in the whole course of the alimentary canal, and give an uncommon taint to the stools ; and hence the exhibition of fixed air in effervescing saline draughts, or in *Bewley's julep*, may be a rational, as well as efficacious remedy, when these symptoms appear.

Much has been attempted to be deduced in support of pre-existing putridity, from the proneness of the bodies, of such as have died of this disease, to putrefaction. That this will often happen I have no doubt, especially, where *petechiæ* abound, or other hemorrhages have occurred : but I believe no bodies, will be more prone to become speedily offensive, than those, of such as have died of highly inflammatory complaints.

After



After all, there seems to be something in the effect of contagion, and the other causes which produce this fever, superadded to that debility, which so evidently occurs, and the obviating of which, is, at present, the great object of our practice: because if it acted merely by producing a certain degree of debility, in the system, it would naturally follow, that whenever debility was induced to that particular degree, by any means; that the disease in question, in one state or other, should ensue. This however, we know is not the case; and besides upon this principle, recovery would be impossible, as no degree of debility could be more extreme, than that which was sometimes seen, when the fever left the patient; and yet nothing, that could be denominated disease, then existed. It is probable, (and the conjecture is at least harmless,) that the volatile something which issues from the diseased bodies, or infected cloaths, and whatever else gives rise to this fever, is absorbed into the system; where it continues to act upon the irritable and muscular fibres, by destroying their tone, and perhaps circulates with the fluids, during the course of the

the disease: but is of too subtile a nature to be the object of our senses, much less, at present, of our practice, otherwise than in tracing or obviating its effects.

## F I N I S.

## E R R A T A.

P. 12, line 16, for *emni* read *emivence* — P. 31, line 2d from bottom, for *general*, read *generally*. — P. 33, line 1, for *do*, read *does*. — P. 51, line 15, dele *may*. — P. 60, line 22, for *loosness*, read *looseness* — P. 64, line 9, (in some copies,) for *similar*, read *smaller*. — P. 69, line 6 of the note, for *probabably*, read *probably*. — P. 72, line 7, for *debilty*, read *debility*. — P. 97, line 7, for *preceeding*, read *preceding*.